



# College AND UNIVERSITY Business

**SEPTEMBER 1946: Budget Planning • President & Business Office  
• Dormitory Rooms • College Economy • Mechanical Accounting  
Pays Off • Who Says Classroom Shortage? • Film Service**

## GUEST EDITORIAL

DURING RECENT YEARS, IT HAS BECOME CUSTOMARY to refer to the business administration of colleges and universities as a profession. Perhaps it would be more accurate to speak of the development of the profession of college and university business administration. It is in a state of transition similar to that of the legal profession in the sixteenth century and of the medical profession in the seventeenth century.

The first of the present day learned professions to be recognized as such was probably that of theology. Harvard College, founded in 1636, was established primarily to provide adequate scholarly preparation for the ministry of the gospel.

No one would challenge the professional status of the surgeon of today, but it is instructive to recall that all surgical work of the Middle Ages was performed by the village barber. The universal symbol of the craft of the barber is that of the red striped pole displayed to invite patronage. This striped pole is a historical relic of the days when the barber-surgeon gave his patient or victim a rod to grasp during the crude operation to restrain outcry of pain. The red stripe is reminiscent of the free flow of blood down the rod.

It was not until the surgeons as a group gradually imposed standards of scholarly preparation, proficiency and a code of ethics upon those who would practice the calling of the surgeon that they were able to command a public respect that justifies the use of the term profession.

Judged by these criteria, how far have we progressed along the same road? Scholarly preparation at the graduate level will be possible only as our group produces an adequate volume of publications, indexed and organized, covering the

recognized principles and procedures of our work.

When sufficient material is available for research in the field, more of our universities will be encouraged to offer courses in the business administration of higher education and more college trained men and women will apply for admission to our staff of workers. Step by step, standards of work and achievement will be lifted. This has been the history of all professions, including those of theology, law, medicine, education, journalism and accounting.

It is not enough that the chief business officer of a great university be trained and experienced in the technics of modern business and finance. If he is to serve as one of the inner cabinet of advisers of the president of his institution, he must have a broad background of educational administration. It is impossible to draw a sharp line between educational and business problems. A decision with reference to a business problem in a university may have important effects upon the educational program and, conversely, a change in educational policy may have strong fiscal repercussions.

The close relationship of business and educational administration has been recognized in a number of our larger institutions by the growing practice of conferring the title of vice president in charge of business administration upon the chief business officer, with rank and responsibilities coordinate with those of the vice president in charge of educational administration in the same institution. Chicago, Duke, Princeton, Northwestern, Indiana, Michigan, Minnesota and, recently, Arkansas are only a few of the universities to grant this recognition. It is an important milestone along the road to professional status.—T. E. BLACKWELL.



# College AND UNIVERSITY Business

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## Among the Authors



D. A. WEAVER

The importance of amicable and cooperative relationships between the college president and the business office is discussed in this issue by DAVID ANDREW WEAVER, president of Shurtleff College. Formerly director of teacher training at the College of the City of New York and later dean of Baylor University, Dr. Weaver speaks out of a rich and varied background. . . . KAY MEISTER, who describes functional architecture at the Illinois Institute of Technology, is assistant director of public relations there. During the war she served as an army nurse and saw service in the European theater of operations. . . . ROY WALTERS of Berea College describes the dairy operated as one of the student training activities of that institution in the Kentucky foothills. He is an active member of the American College Public Relations Association.



J. B. TROUSDALE

JAMES B. TROUSDALE, auditor and assistant treasurer of Cornell University, points out the importance of budget planning in order to assure a smooth running organization. His hobby is photographing movie stars on the screen with his candid camera. He likes to read books like "The Egg and I" and "just loves gardening, as long as I can get my wife to plant it and pull the weeds." . . . DEAN C. E. PARTCH of the school of education, Rutgers University, has completed one of the most exhaustive surveys extant on the effect of enrollment growth on the future of colleges and universities.



R. B. STEWART

DR. ROBERT B. STEWART, vice president and controller of Purdue University, is one of the most active leaders of higher education in America. He was chairman of the army-navy joint board for uniform contracts with college training units and later was appointed chairman of a special committee in connection with Veterans Administration relations with colleges and universities. Since 1925, he has been controller at Purdue; holding that post at 29 years of age made him the youngest such officer of a major educational institution in the United States. . . . Trends in campus design are discussed by ERNEST L. STOUTER, architect for the University of Illinois. He has been a winner of the American Institute of Architects medal and of Pan American Congress of Architects medals.



G. W. JACOBY

DR. GEORGE W. JACOBY JR. returns to direct the health service program at Wooster College after several years' experience as a medical officer in the United States Maritime Service. As a sideline, Dr. Jacoby has invented a device for mass fingerprinting and has patented a motor-driven, office sized hypodermic needle sharpener. . . . CLAUDE M. REAVES JR., business manager of Huntingdon College, has made the operation of dining halls a hobby ever since he was manager of auxiliary enterprises at Birmingham-Southern College.





Illinois Institute of Technology.\*

## PRESIDENT and BUSINESS OFFICE

### DAVID ANDREW WEAVER

President, Shurtliff College

IN THE ADMINISTRATION OF A college or university, financial transactions normally serve as a center of gravity. If the business office functions efficiently it is generally assumed that the institution is operating on a high level. Although it is important that the business affairs of an institution be handled efficiently and with insight, it does not follow that the institution is operating on a high plane. The end product of an educational institution is well trained students rather than financial economy alone.

• **PHILOSOPHY.** It seems desirable that the president and business manager agree upon the guiding philosophy of the institution, which will enable them to work amicably as a team. When the fundamental principles which govern both financial economy and lasting human values are agreed upon there is no concern over power or authority by either the president or the business manager. It is just as necessary for the president to understand the problems and responsi-

bilities of the business office as it is for the business manager to adapt and adjust to the guiding philosophy of the institution.

It is unfortunate that the idea of power or authority should be substituted by the president for leadership and direction. Indeed, the president should have a sufficient background of knowledge and experience in the realm of finance to be at home with the business problems and yet be sympathetic with the business manager in his interpretation of those problems.

The president's knowledge of finance should not prompt him to dominate the business office. Instead, it should encourage him so to interpret the needs of the institution that the business manager will be conscious of support of the administration without the constant feeling that every decision must be verified by the president.

If a proper agreement has been reached on a basic philosophy the de-

tails that accrue are of little consequence. Every faculty member and every member of the administrative staff should be aware of the purpose of the institution as a whole. The purpose of each institution, therefore, will be readily identified within this broad concept.

However, it is entirely possible, without a consciousness of a guiding philosophy, for even a faculty member to forget that all of the administrative machinery and the presence of the faculty are designed for the purpose of preparing a better and a more useful type of citizenry.

When this philosophy is reduced to practice many unhappy experiences are eliminated for both president and business manager. It is gratifying to discover the breadth of influence of a keen, energetic business manager on a student body. He may become one of the most useful members of the entire staff by virtue of his attitude

\*President Henry T. Heald, right, confers with Faymond J. Spaeth, treasurer and business manager, at Illinois Tech.

and his interest in the finished product. Such interest on the part of a business manager should be capitalized on and encouraged by the administration.

In smaller colleges and universities, the activities and operation of the business office should not be confined to mere finance. Obviously, in the large institutions the business manager is so involved in numerous financial details of the budget, in accounting procedure, in working with the purchasing agent, in keeping current expenses at a low level, in dealing with capital outlay, debt repayment or a sinking fund that he has little or no opportunity for contribution to the finished product. He merely serves as an important agent which is comparable to performing an important function on an assembly line in an industrial plant.

In American higher education there has resulted great waste because of the lack of effective teamwork. If emphasis is placed upon efficient and effective service the "power complex" has no place, and both the president and the business manager will be concerned with constantly improving even the fine product of their institution.

While it is taken for granted that both officers will have the necessary financial training and experience for their respective positions, it cannot be taken for granted that they agree on the basic philosophy of their institution.

• **FINANCIAL ECONOMY.** It is to be expected that the business manager will bring to his office ability to interpret transactions in terms of financial economy. His training, his experience and his position demand such ability. It is important, however, that there be an interpretation made of what constitutes financial economy.

The educational institution is established and is maintained for service to society and not for the purpose of demonstrating the operation of a corporation on the profit motive. Therefore, both the president and the business manager must be constantly aware of the intangible values which are set apart from financial economy.

There are occasions when these intangibles must be chosen in preference to financial economy. When the business manager has the proper sup-

port of the administration he should be prepared to make the choice between financial economy and the intangible values.

It is unfortunate that in many instances, because the business manager has to deny certain requests for expenditures, a legend of a negative nature has grown up around his office. That business manager who is definitely concerned with even financial economy is not attempting to prevent faculty members or any department from getting what is needed. He is simply attempting to use the funds at their disposal as dictated by the budget which, in the end, works for the benefit of the faculty and the administration.

In this respect it is the duty of the president to attempt to educate the members of the entire institution to the responsibilities of the business manager so that they will likewise understand that a negative answer is not determined by a desire for power. The refusal of the business manager to grant a request is dictated by certain financial principles which govern not only his office but the entire educational institution. Consequently, the very man who is attempting to conserve resources at his disposal and to use them in the wisest manner is often misunderstood and his services are not appreciated because of the negative answer he has given to a few requests for extra funds.

• **ECONOMY IN EDUCATIONAL VALUES.** At this point the business manager leaves the balance sheet and takes on the rôle of the philosopher. The business manager who has a broad vision of the opportunities of his office will be quick to sense that his office, like that of every other office of administration, is a means to an end. All the equipment of the college or university is assembled for the purpose of giving the students contact with great personalities, inspirational experiences and a lofty concept of life.

When the administration and the business office have the proper relationship, the business manager is encouraged to perform more than the minimum requirements of his office. He may discover many educational values that may be preserved because of his intimate contact with students, values that might be overlooked by the president.

• **EDUCATIONAL LEADERSHIP.** The educational leadership of every institution must be determined in large part by the president. If the president is not farsighted and if he does not demonstrate qualities of leadership even aggressive faculty and staff members will lose a certain initiative.

Among the characteristics of leadership are thoroughness, efficiency, vision, organizing ability, sound judgment, sympathy and understanding. If there is this understanding of the opportunity of the business office, the business manager will be supported, encouraged and directed sufficiently to make him feel that he is a vital part of the institution and that he does *belong* in his own right.

This cooperative relationship cannot be overemphasized. From the nature of conditions, the offices of the president and business manager are wedded to each other. If the president is an educational leader this wholesome relationship will be established and maintained. It is basic for an efficient and happy administration. When the business manager has the portfolio there is reason for his exercising initiative and exerting his influence in leadership. Any president who fails to capitalize upon this opportunity will in time discover this as a limitation.

The business manager is in position to interpret trends and may gather much valuable information not normally accessible to the president. The business manager, by virtue of his position and experience, should aid materially in planning for and actually assisting in fund raising. Since the financial structure is such an important factor, the business manager should have an important contribution to make in planning for new buildings and for an expansion program. He must be relied upon to a large extent to keep the administration informed of needs, of new available materials and of the best type of equipment for the institution and to supply other specialized knowledge in this field. If the business manager is imbued with the spirit of progress the administration will find it less difficult to adapt to new needs that arise with increased demands upon the institution for service.

The institution that has a definite objective will likewise have a guiding philosophy by which the president and the business manager steer their courses cooperatively.



# INTELLIGENT BUDGET PLANNING

J. B. TROUSDALE

Auditor, Cornell University

**MAKING UP THE COLLEGE BUDGET** in normal times is always a problem, for the income never is high enough to do the things that should be done. College presidents realized last spring, moreover, that, with the unprecedented demand for admission caused principally by the returning G.I., they had a new kind of problem in planning for 1946-47.

To the outsider, the increased registration may look like extra money for the college but to those within the academic halls it is perfectly evident that an extra financial burden has been added. The tuition income from each extra student does not cover the extra cost of teaching personnel and facilities and the housing problems for both students and faculty seem to have no adequate solution and place an extra financial burden on the college.

Endowed colleges, by their very name, are colleges that operate partially on endowment income. Often the tuition fee covers only half the cost of instruction. Assuming a tuition fee of \$500 and a rate of investment income of 4 per cent, each additional student admitted means a financial loss to the college unless about \$12,500 additional unrestricted endowment turns up at the same time.

• **BUDGET PREPARATION.** From all I can learn, budget preparation has become fairly well standardized in most colleges. It starts with a call from the president to the deans in January or February. As the requests come in, the business office tabulates them and returns to the president a statement showing last year's budget allowance and the requests for the new year. Along with this goes the estimate of income so that the president has before him the amount he must cut down. In any well run university the deans always ask for more money than is available; it would be a poor dean who could not think up methods to improve the quality of his teaching and research.

The president is now faced with one of his major problems: where to cut and how much. The success of his college or university for rendering service may depend largely upon his decision as to which departments should have more money and which should be held in line. His decision made, the business office prints the budget for the executive committee; the president defends it; then it goes to the full board. When passed in final form by the board, usually in April or May, it is then reprinted for office use and for the trustee minutes.

Budgets should be prepared in the same order as the items appear in the annual financial report, and of course the appropriation ledger should follow the same order for convenience. The proper order is that given by the National Committee on Standard Reports for Institutions of Higher Education.

This year, because of the certainty of increased registration in the fall, creation of new departments and the return of many of the faculty from war service, our budget took such a jump upward that we found it necessary to make a special analysis of the factors which caused it to increase so substantially. This was of considerable value to the trustees in evaluating the budget.

Some colleges have their budgets prepared in great detail; each departmental appropriation is broken down into 10 or 12 items, such as salaries of instruction, administrative salaries, equipment, telephone and telegraph, freight and express, office supplies, laboratory supplies, travel, personal service, repairs to laboratory equipment, publications.

All the foregoing unnecessary detail is carried to the attention of all concerned and finally the books are set up with the same detail. This makes work for everyone and accomplishes little. Except for the first three items, the remainder should be lumped into a single account. In state colleges, the

amount of detail is usually governed by state requirements.

Once the budget is approved, no cut should be made in it during the year except in extreme cases. Nothing aggravates a department head more than to have some of his money taken away from him in the middle of the year.

As for auxiliary enterprises, their budgets should be prepared separately. They should operate on their own income so that losses need not be made up from the educational budget. Ordinarily, they should retain their surpluses to improve their services and to provide for expansion.

Some colleges go into great detail in estimating investment income, even going so far as to set down income expected from each bond, stock, mortgage and piece of real estate. The trend is to omit this laborious process and instead assign in advance a fixed rate of income to apply for one year on all endowment funds. This should be set conservatively, so that investment income covers the commitment. Any surplus should be added to a reserve fund, to be drawn upon at any time the investment income falls below the commitment.

For those departments having the use of certain restricted endowment income, this system has an advantage, too, in that it gives them a definite amount to work with, known in advance.

Many persons thought the G.I. bill would be a boon to colleges financially, that it would fill up empty classrooms until times were normal. The reverse has been the case. The G.I., in most cases, has added a great financial burden to the colleges, owing partly to the large amount of extra clerical work necessary in billing the government and the counseling services required and partly to the fact that he does not bring with him the additional endowment funds referred to. The business office finds it requires about ten times as much work to col-



lect from the government for a G.I. as from a civilian. The colleges are glad to give priority on admissions to the G.I. but in so doing a serious budgetary problem results.

• **BUDGET CONTROL.** This problem was solved in most colleges years ago. The common method is to use a budgetary accounting machine in which are entered the appropriation, the commitments, the expenses, the miscellaneous receipts and the free balance. A statement, which is a copy of the ledger sheet, goes to each department monthly or any time on request. One girl with one machine can take care of \$7,000,000 of expense per year.

At Cornell we use a ledger sheet 11 by 13 inches in size. All balance pick-ups are made on the journal sheet. If an error is made in a balance pick-up, the machine locks.

The business office seldom questions a requisition when approved by the dean if the money is available. The purchasing department is invaluable in rendering assistance to the faculty in determining supply sources.

• **BUDGET REVISION.** No budget was ever approved that did not need revision as the year progressed. No matter how uncertain the year ahead may seem, it is essential to have a budget approved before July 1. This enables

the business office to set it up on the books in June so that it is ready to record transactions on July 1; it enables the faculty to know what to expect and plan accordingly. Every month, however, there will be new appropriations made by the trustees and often there will be lapses. As the year passes, the treasurer will be constantly revising his estimated income in accordance with facts; consequently, every budget should contain a contingency fund or start with a surplus unless there is a reserve fund built up to take care of extras sure to come.

• **BUDGET REPORTS.** The university does not have a profit and loss statement but it does have in its place a budget report that goes to the trustees monthly. This is a summary of the changes that have occurred since the last meeting: new appropriations, lapses, changes in estimated income, ending with the present estimated surplus or deficit for the year. With such a report in front of them, the trustees can pass on requests for new money intelligently and see easily which way the wind is blowing.

Budget work in state colleges is of course quite different from the work in endowed colleges. In state colleges you receive what the state allows and there is less flexibility. Endowment income and student fees are usually of secondary importance. At Cornell we are half endowed and half state so we have both types of budgets with which to contend.

• **SUMMARY.** Intelligent budget planning, in the final analysis, comes down to this: The president and the trustees must decide whether they will be ultraconservative or optimistic. If overconservative, they hold all expenses down and thereby run the risk of losing the best members of their faculty and of letting the plant and equipment depreciate. Thus the college may gradually lose its place of eminence.

If the president and trustees are optimistic, they will tend to increase the quality of the faculty and facilities, always hoping the alumni will come through with endowments and gifts to keep them out of the red.

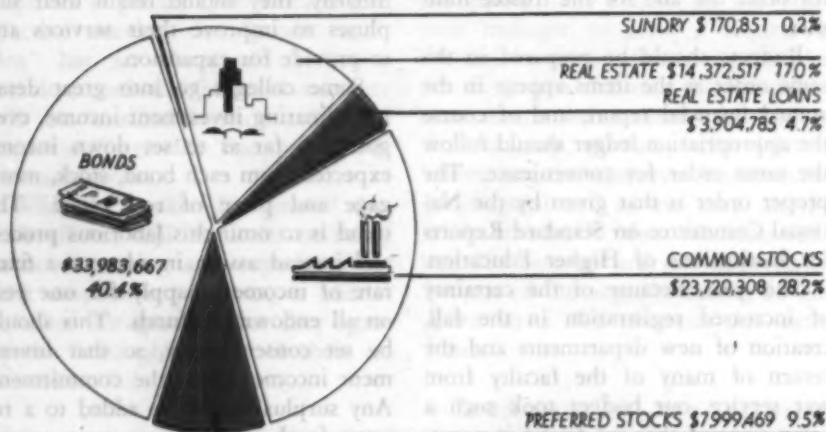
The greatest weight of responsibility in this matter seems to fall on the president. To keep his university in the black and at the same time to build up its quality, this is his eternal problem. In this, the business officer can be of great assistance.

## THE UNIVERSITY OF CHICAGO

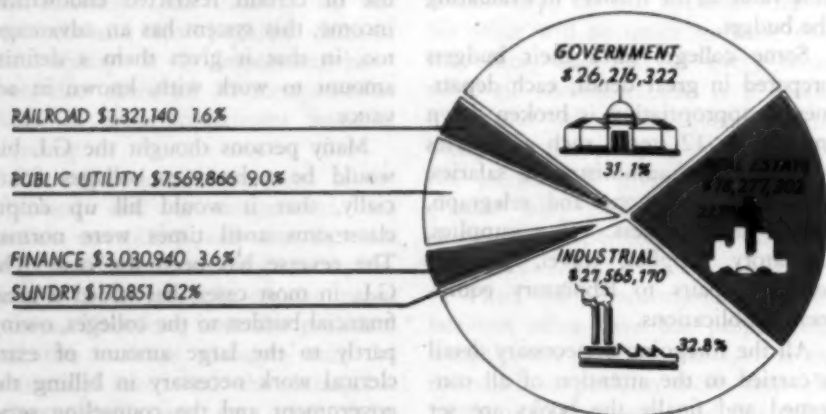
### CHARTS OF INVESTMENTS OWNED BASED ON BOOK VALUE AS AT JUNE 30, 1945

Total Investments \$84,151,591

#### BY CLASS OF INVESTMENT



#### BY TYPE OF ENTERPRISE



Dramatizing the budget or college finances in general is not an easy technic. The University of Chicago in one booklet makes a financial report to two types of readers: those wishing a bird's eye view and those wishing details of operations. The pie chart is an example.



From Purdue University

## STUDENT HEALTH SERVICE AT COLLEGE OF WOOSTER

HYGEIA HALL, THE STUDENT HEALTH center of the College of Wooster, was formally dedicated on Oct. 2, 1928. It was the expressed desire at that time that Hygeia Hall should be a symbol by which the good of one generation would not become lost when that generation had passed on but would remain of value for each future generation of students who passed through its portals.

Hygeia Hall is a fireproof, three story Gothic structure of white brick and Indiana limestone. The ground floor is devoted to administrative purposes, consultation rooms, physical therapy units, eye, ear, nose and throat unit, complete minor and major surgical units and x-ray and laboratory units.

The second floor has a north and south wing, each of which contains eight beds in private and ward bed arrangement. The third floor is arranged into complete isolation units for contagious diseases with individual bath and toilet facilities for each unit, plus isolation sterilization equipment for bedpans, dishes and other items

### GEORGE W. JACOBY Jr., M.D.

Director of Student Health  
College of Wooster

requiring such treatment. Normal hospital bed capacity is 25; however, full accommodations for 42 beds can be provided without overcrowding.

The college has an active health service. Surveys reveal that 85 per cent of the student body voluntarily requests and receives medical consultation and advice during each school year. The dispensary visits for each student enrolled average 13 during the school year. The average loss of time from illness is approximately one day per student per year.

The scope of the student health service is large and is limited directly to the size of the staff and the caliber of personnel employed. In general, then, the program at Wooster is as follows:

1. The establishment of accurately recorded physical examination data for the purpose of summarizing and correlating family and personal histories

with physical findings upon which present or future illnesses may be treated or prevented. All laboratory aids, such as blood tests, tuberculosis patch tests, urine examinations, x-ray and fluoroscopic examinations, are used either routinely or as indicated. To this end, close cooperative relationships are maintained with the family and the family physician.

2. Personal information is given regarding the relationships of physical and mental health to the personal and social adjustments of the individual. We feel that this service is an integral part of the health service for it is a well known fact that during this period of intensive training and rapid acquisition of knowledge many of the fundamental ideas and ideals of the individual are challenged. Various points of interest are stimulated and many environmental problems unfold.

Marked personality changes may result. The opportunity for early correction of these problems lies primarily in the health department where personal, social, mental and physical problems can be correlated and ad-



justed when they develop.

3. Ambulatory treatment for minor medical and surgical problems is given in the dispensary. All students with disorders of more than a minor nature are immediately hospitalized for observation and treatment. We do not permit ill students to remain in their rooms. We stress here again the prevention in the spread of illnesses to others and the protection of the patient from the contact diseases of his associates.

The value of early treatment and of bed rest is also emphasized and is especially significant in view of the almost complete absence of pneumonia, otitis media, bronchitis and other complicating diseases. All patients with contagious diseases are placed in our fully equipped, modern contagion unit with its private bathrooms and sterilization facilities.

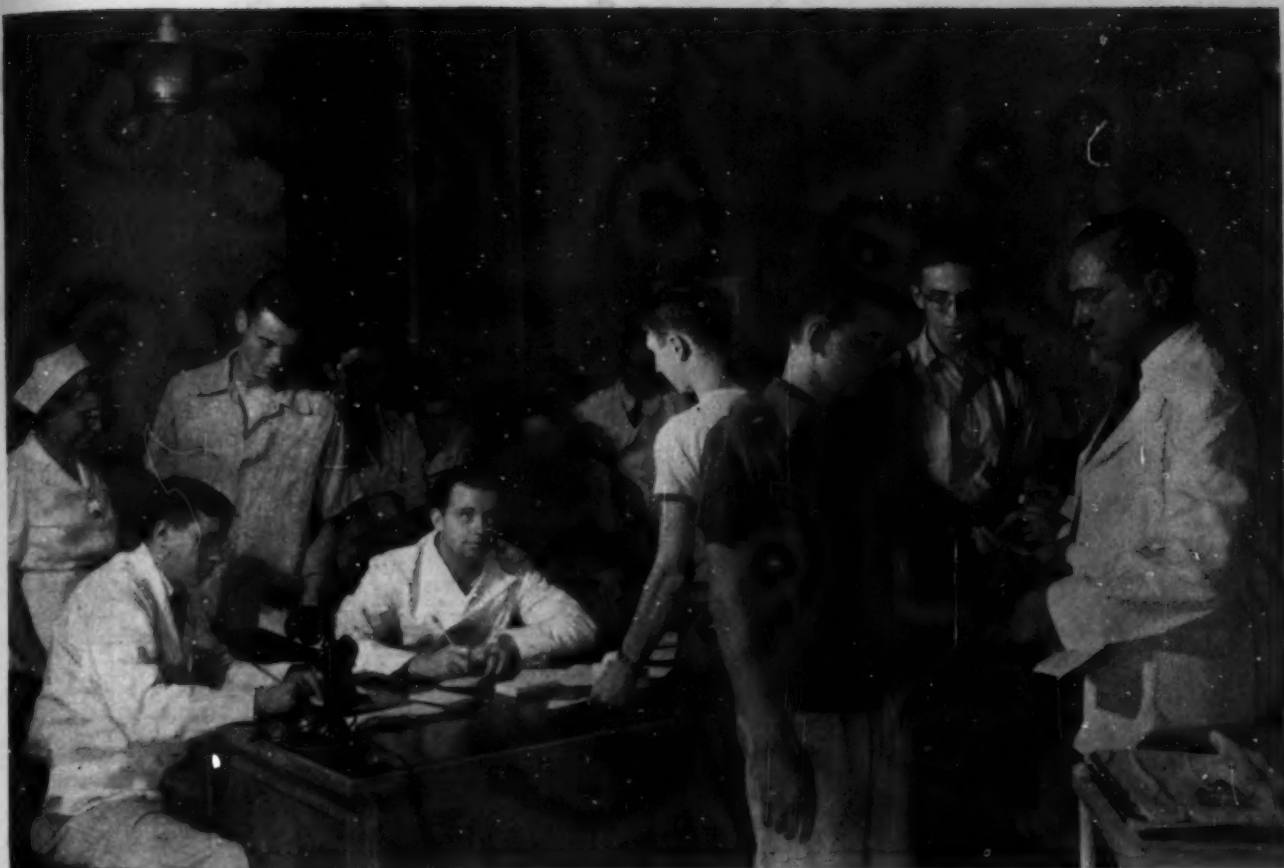
4. Students faced with the possibility of surgery or any special treatment



Above: Wooster girls get hospital care in Hygeia Hall. Center: A doctor observes Purdue student's blood pressure. Below: Nurse and student in x-ray unit at Hygeia Hall.







Above: New students at Purdue receiving mantoux skin test. Chest x-rays, following positive reactions, usually show one case or less per thousand. Left: Dr. Jacoby aids a Wooster athlete.

their visits. They may, by observation, learn what a well equipped office should contain. They may learn the proper approach to medical problems and the proper methods of care of their individual ailments as well as problems which may arise in making a correct diagnosis and evaluation of the medication given in the correction of these ailments. Thus they may be better prepared to discriminate between sound and unsound medical practice and procedures.

The late Dr. William Osler once stated: "Medical progress will be made hand in hand with public information on medical subjects." So the fundamental impressions acquired by the college student in reference to the proper methods of diagnosis, treatment, prognosis, prevention and related measures will assist him in the proper selection of competent medical attention and other health measures for himself and family in the future.

The student health service of the College of Wooster has the largest class of students on the campus. In addition to caring for the ever present current illnesses from which few escape, every opportunity is made to specialize in a personalized type of health education for the students.

are referred to specialists for consultation and treatment. When possible, students are permitted to return to their homes for these procedures; if that is inadvisable, surgery is performed by the consulting or home surgeon at Hygeia Hall, which has a modern major surgical unit. The student thus has competent professional medical and surgical advice within call at all times.

5. The medical personnel is in constant cooperation with other college

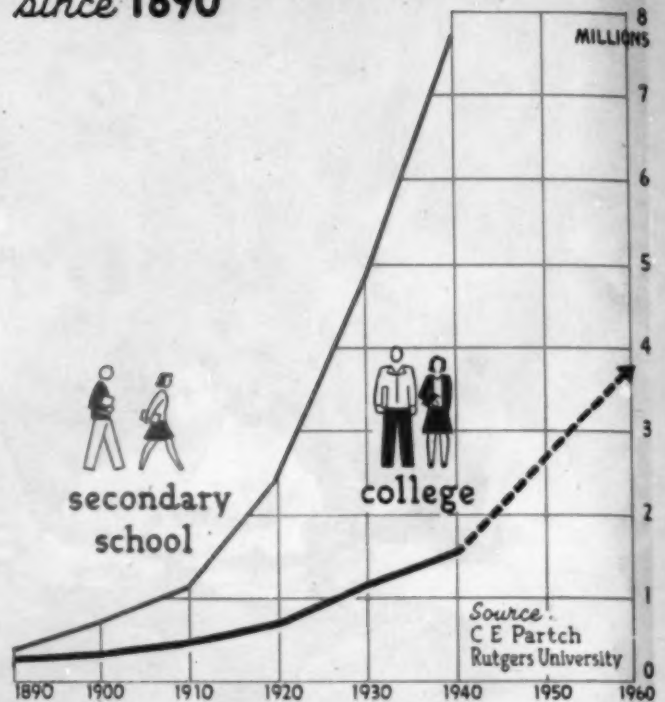
on the road, and attends all other major sports at home. In this relationship there are extraordinary opportunities for health teaching in the formulation of health habits and ideals.

6. General supervision of dormitories, food, sanitation, water and other campus health measures falls within the jurisdiction of the student health service.

7. Hygeia Hall affords the students unusual opportunities to seek medical information on any subject during

# Increases in SCHOOL ENROLLMENTS since 1890

## ENROLLMENT TRENDS



MUCH CONJECTURE HAS ARISEN from the G.I. Bill of Rights and its probable effect on the future enrollments in educational institutions.

No estimate can be more than a scientific combination of several factors. It must take into account the number of students in colleges before the war and today; the number of men students and the number of women students; the number of vet-

erans eligible for training and the number qualified by previous education; the increases in secondary school enrollment and their probable effect on college and university enrollment: in other words, the normal increase probable if there were no veterans to be accounted for.

Dean Partch of the school of education, Rutgers University, has made such a scientific appraisal of known

factors, including the experience following World War I. He has projected his conclusions in a series of charts. In making his study, Dean Partch has had access to all official sources and these data are the most comprehensive calculation yet made.

The interpretation of Dean Partch's findings is presented here in a series of charts prepared by COLLEGE and UNIVERSITY BUSINESS.

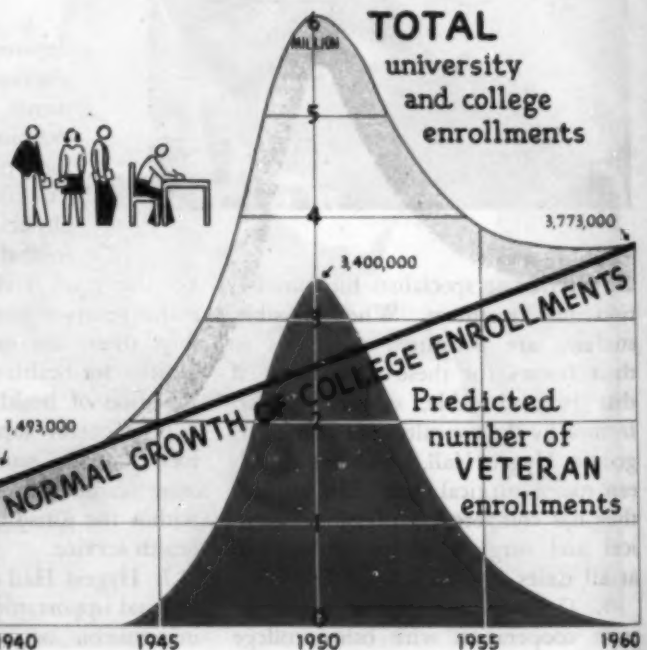
## TODAY of each 10,000 U.S. population...

730  
are of college age (18-21). Of these...

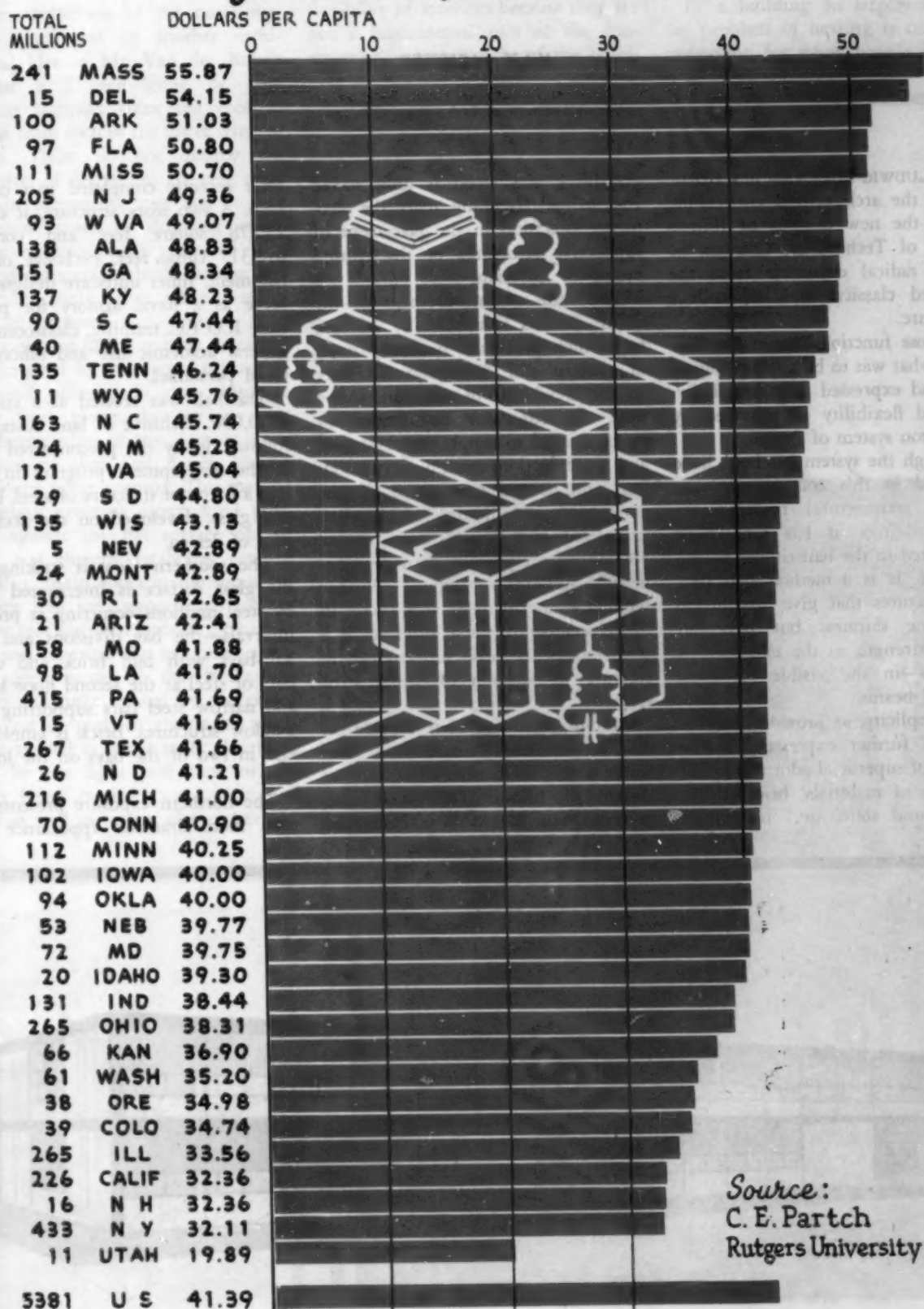
112  
are in universities and colleges...



(67 men... 45 women)



# Per Capita Expenditures for BUILDINGS, GROUNDS and EQUIPMENT to provide the necessary higher educational facilities for veterans



Source:  
C. E. Partch  
Rutgers University



# GLASS, INSIDE AND OUT

**Steel, brick and glass—mostly glass—are materials chosen  
for new hall at Illinois Tech. Scale of measurement, 24 by  
24 foot bay, will provide symmetry for entire campus**

## KAY MEISTER

Assistant Director of Public Relations  
Illinois Institute of Technology, Chicago

WHEN LUDWIG MIES VAN DER ROHE, head of the architectural curriculum, planned the new campus of Illinois Institute of Technology, Chicago, he made a radical departure from the recognized classical style of college architecture.

He chose functionalism as the keynote of what was to be a technological center and expressed it in simplicity, unity and flexibility as provided by the skeleton system of design.

Although the system has been little recognized in this country as other than an architectural medium for utility buildings, it has long been incorporated in the half-timber houses of Europe. It is a method that provides structures that give an illusion of extreme thinness but have an apparent strength in the exposure of all details—in the visible mullions, braces and beams.

The simplicity, as provided by this system, is further expressed in the total lack of superficial adornment and in the use of materials; brick is left in its natural state, steel is painted

gray-black and wood is only waxed and stained. Nothing mars the geometric precision in the placement of supportive structures or the natural beauty of materials.

The scale of measurement of the entire campus is the 24 by 24 foot bay which gives the necessary unity of pattern and dimension necessary to the flexibility of interiors. As a unit, the bay may be divided or supplemented to supply various shaped and sized sections within each building, and as a measurement of the entire unit of buildings, which when completed will cover an area of 580,800 square yards, it provides symmetry to the campus. Further symmetry and pattern will occur in the placement of each building as a complement to those surrounding it, creating an illusion of vastness of space.

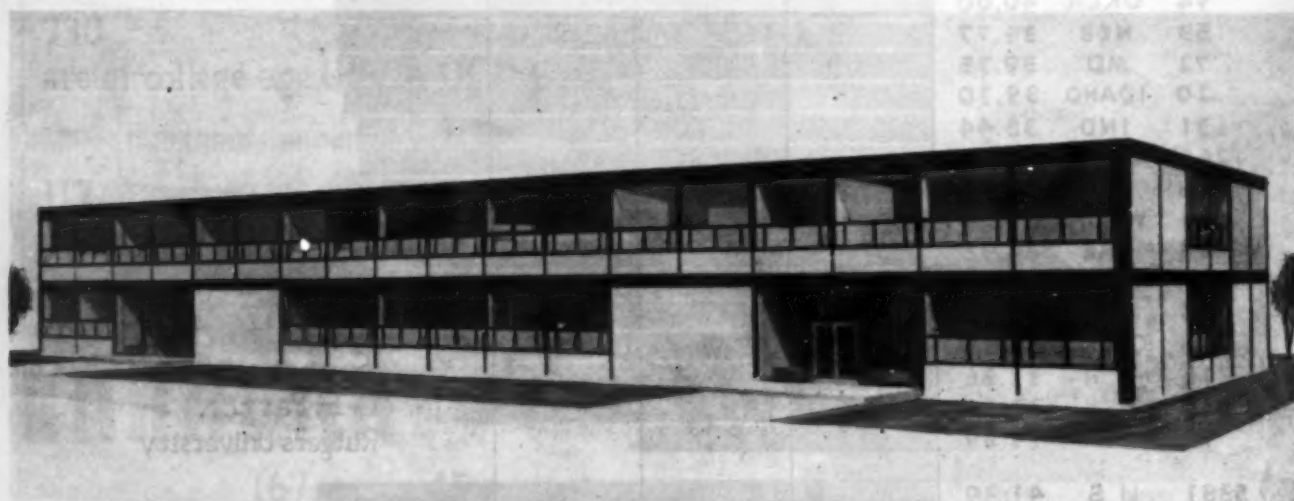
Alumni Memorial Hall, erected on the corner of Thirty-Second and State streets as a memorial to the alumni of Illinois Tech who died in service in World War II, is the

most recently completed part of the plan. A two story structure, it covers 15,278 square feet and contains 612,317 cubic feet, exclusive of the basement. Inner units are designed to serve as a naval armory for peacetime R.O.T.C. training, classrooms for general academic use and offices for naval personnel.

The hall was erected at a cost of \$340,000, exclusive of land costs, and follows closely the preconceived plan of the development program in that it is a fireproof structure of steel, brick and glass, developed on the skeleton plan of design.

The southern view is striking for the glass surface is interrupted only by steel mullions occurring at precise intervals—the bay divisions and the half-bays with buff brick and cross bars of steel at the second floor level, and narrow steel bars supporting the window structures. Brick is employed also in two of the bays on the lower floor.

The northern exposure presents an even more dramatic appearance for



the center half of both floors is a broad span of glass banked by brick elevations at either end.

Although the building gives the appearance of having a perfectly flat roof, immediately presenting the thought of damp weather problems, it is sloped slightly toward drains that are placed at measured intervals on the roof to receive excess water. Further protection of the outer surfaces is afforded by another architectural idea of Mr. Van der Rohe's wherein a 2 inch ledge, or drip, projects outward from the roof as well as from each of the lower window ledges. These do not destroy the symmetry of design but are very practical in preventing rust and surface corrosion caused by dripping water. The steel mullions are protected from ground moisture by brick facings that cover the surface but are not structural in purpose.

Doors used in the outside entrances are designed for maximum utilization of wind pressure in that they are hung from pivots that set in from the frame edge of the door to slide in grooved slots and flatten against the frame upon opening. This method of design prevents direct wind pressure against the flat surface of the door and thereby facilitates ease in opening. Main doors in the south enclosure lead into symmetrical lobbies at the east and west ends of the hall.

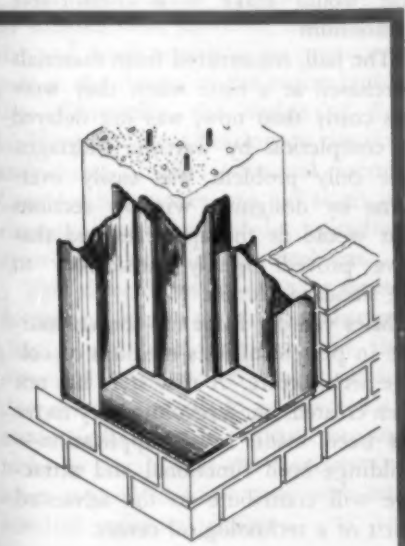
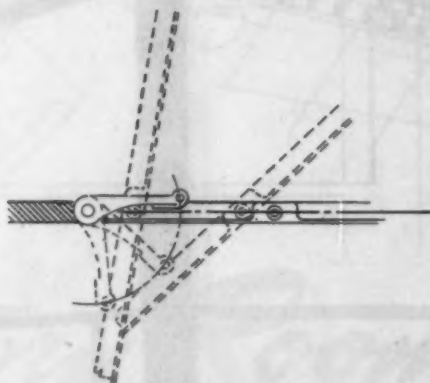
Upon entering the hall, one is immediately aware of the feeling of space and light created by the extensive use of glass in the inner partitions as well as in the outer elevations and by the light buff tone of the brick being carried to the inner surface as well as to the plaster sections.

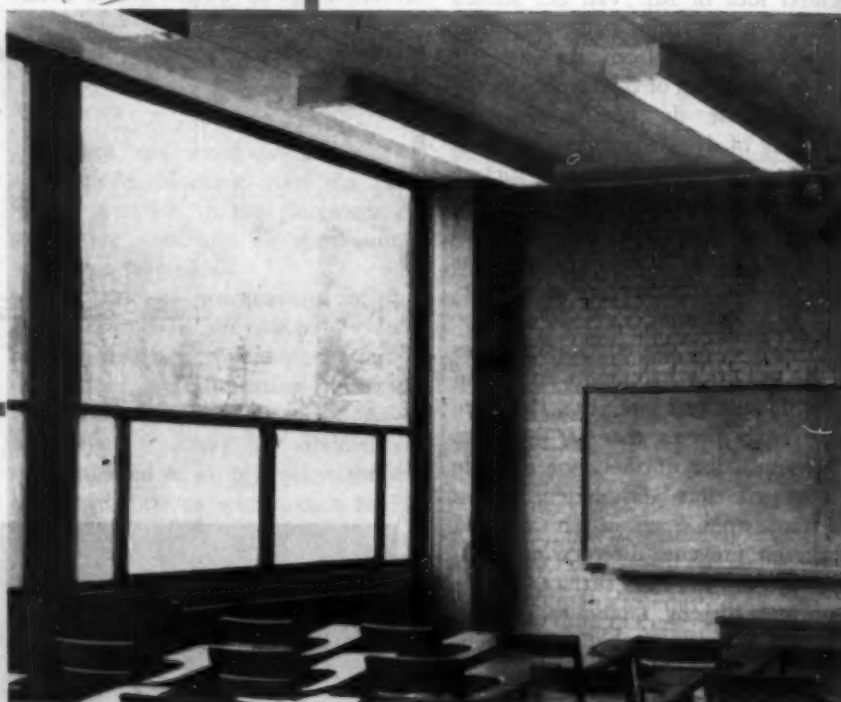
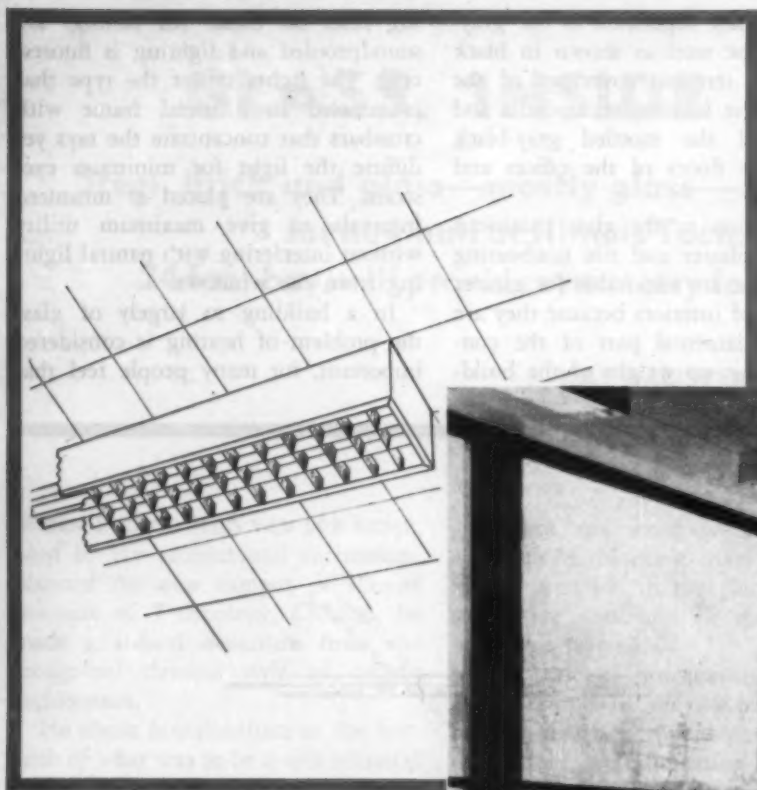
Another color repetition is the gray-black of the steel as shown in black and white terrazzo coverings of the floors of the lobbies, stairs, halls and toilets and the mottled gray-black asphalt tile floors of the offices and classrooms.

In addition to the glass partitions there are plaster and tile nonbearing sections that are removable for greater flexibility of interiors because they are not a fundamental part of the construction, *i.e.* no weight of the build-

ing rests on them. All ceilings are soundproofed and lighting is fluorescent. The lights are of the type that is encased in a metal frame with crossbars that concentrate the rays yet diffuse the light for minimum eye-strain. They are placed at measured intervals to give maximum utility without interfering with natural lighting from the windows.

In a building so largely of glass the problem of heating is considered important, for many people feel that





there is a great heat loss through the vast window space whereas in actuality a  $\frac{1}{4}$  inch plate glass does not have much greater conductivity of cold and heat than does an 8 inch brick wall.

Artificial heat, which will be supplemented by the heat of rays of the sun, is provided by a hot water system with steel, fin type of radiators placed at strategic positions throughout the building. This type of radiator was selected because it gives a greater volume of heat for its size than would certain other types of different construction and also serves to conform with design of the building. An example of their placement is in their being lined beneath the entire glass span of the armory thereby heating the room by radiation and also warming the air that might enter through the glass. Further provision for heat is provided by controlled air heat in the larger areas of the building.

Natural ventilation is produced by the many windows, transoms and

ventilators throughout the hall. When transoms and windows are opened at proper 30 degree angles, which gives the maximum utility of air passage, sufficient air currents circulate through the entire building to give comfort to occupants. Mechanical ventilation is used in the washrooms and the armory.

The main floor is divided into navy offices, classrooms and the naval armory. The range in size in the offices and classrooms is from 12 by 24 feet to 24 by 48 on the first floor and from 16 by 24 feet to 24 by 72 on the second floor. There is a total of six offices and 10 classrooms in addition to the armory in the building. The offices will accommodate 35 men and the 10 classrooms, with a seating capacity of from 40 to 75 students in each, will accommodate 6500 class hours daily.

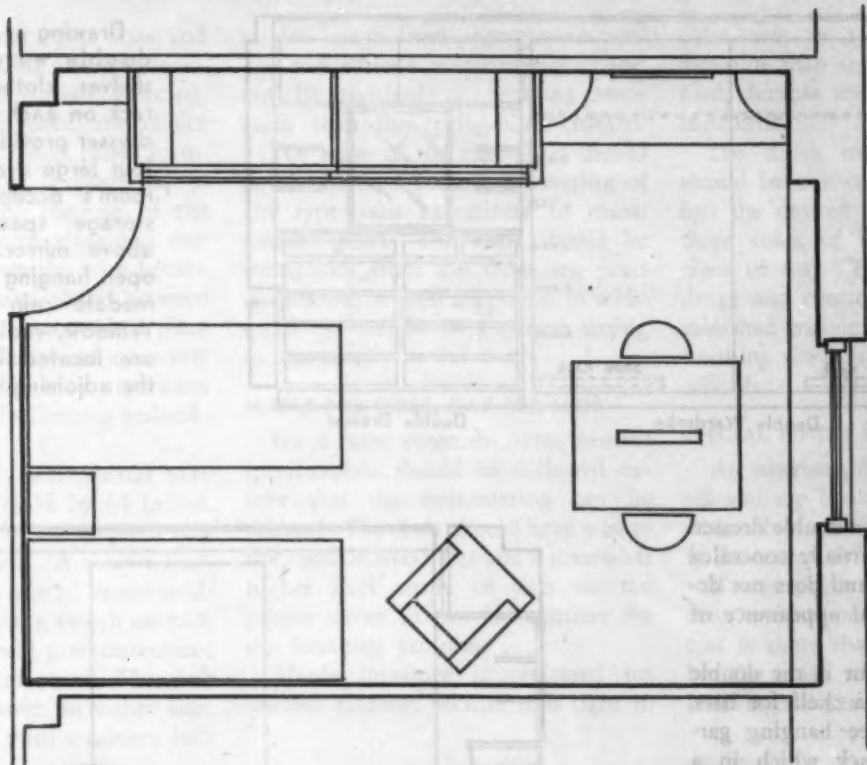
The armory, 48 by 128 feet, is a two story area walled by glass on two sides and brick on the other two. It

has been equipped with modern naval science armaments, including a mock-up signal bridge and simulated radar equipment. It would be easily adaptable, however, to other purposes in colleges that have no need for an armory, i.e. the height and general size would make it a comfortable gymnasium.

The hall, constructed from materials purchased at a time when they were less costly than now, was not delayed in completion by wartime shortages. The only problem was easily overcome by designing window sections that would fit the apertures and that have proved equally satisfactory to the standard section.

Mies van der Rohe has shown courage in presenting this medium of college architecture. A new style has not been created, but a revolutionary move has been made in its application—buildings both functional and attractive will contribute to the advanced spirit of a technological center.





# Dormitory Room

**H. W. LOMAN**

Purchasing Agent

Director of Dormitories and Dining Commons  
The Pennsylvania State College

THE DORMITORY ROOM IS A PLACE in which the student spends approximately half his time: It is his home, his study, his living room and his bedroom during his college generation. It should, therefore, be given considerable thought in design, furnishing and decoration.

The room cannot be considered as an isolated unit, however, because its size and shape constitute an important part in the design of the entire building. Conversely, the design of the building has great bearing on the size and shape of the individual rooms. Considerable money can be saved or excessive costs expended, depending upon the solution of this problem.

The dimensions of the proposed dormitory room should be checked closely with the architect and the structural engineer to make certain that the dimensions do not exceed an economical design in the structure and to be as certain that the maximum of space is used in conformity with economical structural design.

The dormitory room described here has been studied from all angles and from the standpoint of the furniture desired. It is a typical double room where two students in either a women's dormitory or a men's dormitory can live, study, lounge and sleep. It is a solution to the problem of providing maximum utility and comfort at the minimum of cost and maintenance to the satisfaction of both student and school.

The floor is of linoleum cemented to the cement slab. The pattern of the linoleum is a jaspé field with a color feature strip and a plain border. Careful selection of colors not only adds materially to the pleasing interior decorating scheme but produces the optical effect of a rug.

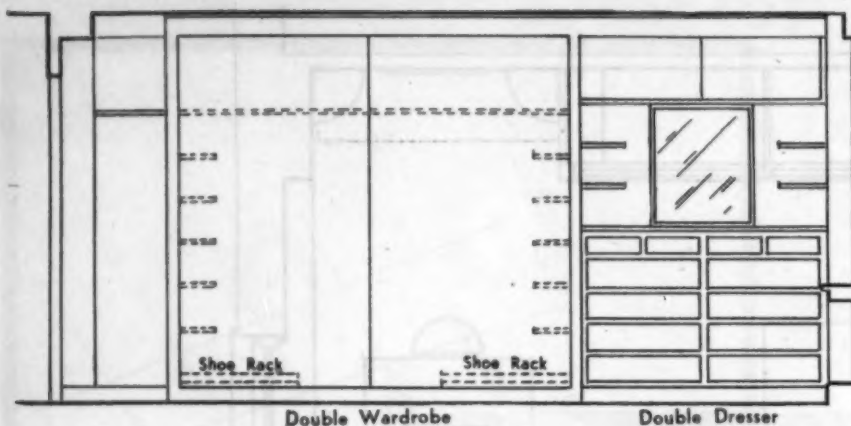
A linoleum floor is soft, warm and restful, is easily maintained and eliminates the expense of the purchase of rugs in addition to eliminating the extra maintenance cost of their cleaning. The linoleum floor is joined to the plaster wall with a sanitary cove

and base which may be linoleum, rubber or asphalt tile.

The walls and ceiling are of sand finished plaster except the interior of the wardrobe, which is of smooth plaster. The plaster may be either pre-colored or painted. The color scheme is worked out with a predetermined group of colors to harmonize with the various furnishings and is distributed throughout the building so that all of the warm colors are applied in rooms having northern exposures, the cool colors in rooms having southern exposures and the neutral colors in the east and west rooms.

Care should be exercised in using harmonizing colors on opposite sides of the corridor. An example would be green on the southern side and yellow on the northern side of the building.

The room is approximately 12 by 17 feet and included as a part of its design are built-in features. These consist of an open hanging space for such items as a rain coat, an overcoat, if it is damp, rubbers and rain hat;



Drawing at left shows built-in double wardrobe, with its shelves, clothes bar and shoe rack on each side, and double dresser providing two small and four large drawers for each of room's occupants. Additional storage space is concealed above mirror. At far left is open hanging space to accommodate rain togs until dry. Window, radiator, bookshelves are located in the sketch of the adjoining wall shown below.

double wardrobe, and a double dresser. The open space is partially concealed by the corridor door and does not detract from the general appearance of the room.

Immediately adjacent is the double wardrobe fitted with a shelf for hats, a clothes bar for free hanging garments and a shoe rack which in a women's dormitory would be only two thirds the width of the wardrobe to provide additional height for evening gowns. Five utility shelves in each half of the wardrobe are immediately accessible when the door slides open. Doors are fitted with individually keyed locks and slide on tracks secured to the wardrobe floor, which is 3 inches higher than the room floor.

The built-in double dresser adjacent to the wardrobe has adequate storage space consisting of two small and four large drawers per student. The dresser is approximately 46 inches high, 18 inches deep and 63 inches wide above which is a mirror 24 by 27 inches on each side of which are two knick-knack shelves.

A dresser light is mounted directly above the mirror and is controlled by a switch located on the sidewall. Additional storage space is provided above the dresser unit for tennis rackets, extra hat boxes and miscellaneous items.

In addition to the convenience of the built-in dressing units, the complications of individual free standing dressers to be moved by the students have been eliminated, the cost of the units has been diminished by the elimination of finished ends and backs and, in addition, there are savings on transportation because the unit is delivered to the job site with other millwork and not as case goods. Finally, without extra cost, the entire unit provides a sound deadening feature between the student rooms.



A room designed with one window located on the center line of the room makes it possible to locate the radiator under the window sill and flank it with built-in bookcases on either side. A continuous top shelf the same height as the sill is not only attractive but useful in that it provides additional space for books, pictures and other intimate and personal effects. Books placed conveniently and in order on the bookshelves not only are handy to the study desk but are in plain view and conducive to study.

The movable furniture in the room consists of two single beds, one night stand, one double study desk, two study chairs and either one or two easy chairs, depending upon the money available for furniture.

Beds can be either metal or wood, finished preferably in maple for a women's dormitory and in oak for a men's dormitory. A studio couch is often preferred as it takes up less room and does not have a projecting headboard and footboard to be bumped and marred.

The style of spring and mattress is of considerable importance and care should be exercised in their selection.

The combination box spring and inner spring mattress is highly desirable but is more costly than other combinations. The open-coil spring with the inner spring mattress is often used to effect maximum comfort at reasonable cost. Use of the regular 5 inch felt laid mattress is probably commonest, however.

The price range of inner spring mattresses is wide and a selection can be made within a given budget. Selection of inferior construction, however, will prove to be expensive in the long run. Less care need be exercised in the selection of a felt laid mattress as long as No. 1 or No. 2 U. S. standard subgrade linter is used, laid one layer on top of the other and not blown into the ticking. The ticking, preferably, should be 8 ounce blue and white stripe ACA ticking. The mattress may be either with or without a rolled edge but should have two extra rows of side stitching.

Some advantages have been found in covering the open-coil spring with an envelope made of the same material recommended for the mattress and fitted with either a zipper or ties. This cover will eliminate the collection of



lint and dust in the open coils and can be removed readily and laundered.

Another selection is the link spring. When this kind is used, the choice of a spring made of steel bands forming a platform top is preferred to one made of wire. The use of the latter causes excessive wear and tear of the mattress when the wire breaks.

A small night stand placed between the beds provides a convenient place for a radio, a bed lamp and a favorite book. It serves also as a separation between the beds, facilitating bedmaking and cleaning.

The double study table should have a top approximately 38 by 44 inches, which will provide an ample study area for each student. A double fluorescent study lamp placed in the middle of the desk, with a switch on each side of the lamp, will give convenient and adequate illumination. The desk should have a drawer on either side, each drawer fitted with a cabinet lock keyed differently.

When funds permit, the desk can be designed with a pedestal on each end and fitted with drawers or with bookshelves if the built-in bookshelves are insufficient. If for any reason the built-in bookshelves are not provided, then it is imperative that shelves be included in lieu of the pedestals with drawers.

The study chairs should be of wood or metal. If of wood, no upholstering is required; if of metal, an upholstered seat is recommended. The construction should be substantial to resist the breaking or loosening of joints often caused by repeated tilting on the two rear legs. For wooden chairs, the deep saddle box seat with corner blocks is recommended. All joints should be well glued and pegged with wooden pegs.

#### CHOICE OF EASY CHAIRS

The selection of an easy chair is not a simple one for this item needs to embody the qualities of comfort, stability, utility, compactness and a pleasing appearance. The chair for a girls' room should be upholstered, preferably with a fabric of long-wearing quality such as mohair frieze.

For cleaning purposes, the chair cushions should be reversible as well as removable. The regular spring center seat cushion is recommended for the seat. For the back, either the spring-filled cushion or a pad can be used. A possible objection to the spring cushion is that it may sag from

careless use or from poor construction. The padded back is less expensive and can be repaired or replaced more easily than the spring-filled cushion.

The arms of the easy chair should not be covered because a covering of any type adds excessively to maintenance costs. The arms should be continuous from the front leg posts and should be well supported to withstand the weight of a person sitting on the arm.

#### MAPLE FOR GIRLS, OAK FOR MEN

For a boys' room the same general specifications should be followed except that the upholstering can be omitted. The chair should have a large deep saddle wood seat and a somewhat higher back made of slats on the proper curve to provide comfort for the lounging position.

Maple furniture is preferred for women students because it is light in

color, soft in appearance and more feminine than are other woods; oak is hard, durable and is considered more masculine.

The finish used on either wood should be one coat of stain to establish the desired base color and then three coats of linseed oil and two coats of wax. This finish will resist drugs and cosmetics, resulting in diminished maintenance expense of refinishing the dormitory furniture periodically.

#### SPECIAL FINISH FOR SILLS

An alternate finish to the window sill and top bookshelf, the top of the desk, dresser and night stand is one of the several synthetic materials which will resist cigaret burns, in addition to drug and cosmetic stains. The initial cost is more than that of wood tops but the finish will more than pay for itself over a period of a few years.

## ROOMS at NEW HAMPSHIRE HAVE BUILT-IN FEATURES

IN THREE MEN'S DORMITORIES UNDER construction, the University of New Hampshire will use specially designed, space saving, built-in furniture to increase the institution's housing capacity for veterans.

Use of the custom made furniture will make it possible to accommodate 504 students in the new dormitories in comparison with 315 students under normal conditions. The normal double room will accommodate three students and the single room will take two students during the housing shortage.

Each student will have a built-in unit consisting of desk, bureau and wardrobe, in addition to his bed and desk chair. Double decker beds are being used. The furniture units are designed to eliminate space that would be wasted with the usual movable furniture. One unit of furniture will be removed from each room when college enrollment decreases sufficiently to permit this.

Completion of the dormitories is scheduled for September 30 when the university opens. The buildings are

located off Mill Road behind Hetzel and Fairchild halls, present men's dormitories.

The new buildings are of permanent fireproof construction. They form three sides of a quadrangle around a courtyard, with the fourth side left open for future construction of another dormitory.

Each building is approximately 40 by 200 feet, has three floors and is of cinderblock construction with brick facing. Each has 63 rooms for students, a house director's suite, a lounge room on the ground floor, two recreation rooms on the top floor and two shower and toilet rooms on each of the floors.

Walls dividing the rooms are of cinderblock and will be painted. Stairs are of steel and the floor construction will be steel joists with reinforced concrete slabs. The finished floors are of mastic tile. Estimated cost for the three dormitories is \$450,000.

Eric T. Huddleston, supervising architect of the University of New Hampshire, is the architect for the three new dormitories.



# TRENDS IN CAMPUS DESIGN

ERNEST L. STOFFER

University Architect  
University of Illinois

ALTHOUGH THE COUNTRYWIDE program of planned college and university capital improvements includes every form of college building, the principal emphasis at this time is concentrated on five general types: (1) residence halls, (2) science and engineering buildings, (3) buildings for public assembly, (4) unions, (5) utility services.

The large number of planned residence halls continues a strong prewar trend and results partly from an effort to house a university student population that has been increasing rapidly for a number of years; partly from a firm belief in the academic value of institutionally controlled living and study habits for the undergraduate, particularly the new student; partly because parents prefer such control for their children's first "away from home" experience, and partly because many of the institutions have found the operation of residence halls profitable and in a few cases self liquidating (through favorable tax laws).

On most campuses, the present wave of frantic temporary housing provisions for veterans can be defended only as a continuance of the waste of war. Granting that their provision is largely the result of public pressure, they still cannot be justified under any financial analysis or by any economic laws. Practically all are unsightly and will be found difficult to remove after their original need passes. It is unfortunate that the large expenditures involved cannot be devoted to permanent dormitory construction.

Few colleges of any size will be found which are not erecting, or planning to erect, one or more science and engineering buildings, the result of the recent phenomenal accomplishments of science in industry and accompanying interest of youths in these fields.

Auditoriums, stadiums and sports buildings are being planned by many institutions, the first to meet their growth needs, the latter two as a result of a continuing and a growing public interest in college sports. A new de-

velopment in this field is the indoor sports building providing seating for from 15,000 to 20,000 for basketball, track and general assembly purposes. Previously, such buildings have been limited to the larger cities and to professional sports.

Unions housing college extracurricular activities, all forms of food service and social recreation, general student organizations and activities and providing guest rooms, faculty clubs and similar accommodations have been found to solve a real need. Although the movement in this country is only about 30 years old, a college without such a union now finds itself behind the times.

Power plants, utility extension projects and service buildings represent growing pains. They seldom keep up with the demands. On most campuses, the current construction program is of such magnitude that present utility and service facilities cannot carry the added load and must be given relief.

College and university construction is controlled by the same economic laws as other phases of social life. Increasing building costs have forced the maximum use of every square foot of space. Gone are great stairways and magnificent halls, except in memorial buildings (which are seldom controlled by economic laws). Laboratories, for example, are planned to house several related sciences. Interiors are severely plain. Exposed concrete floor construc-

tion has eliminated plaster ceilings; glazed tile and clay base composition block walls have greatly reduced plaster wall areas. (Plaster slows building construction and is a source of considerable maintenance expense as well.)

On the other hand, construction features that only yesterday were considered luxuries are now considered necessities: high lighting intensities, acoustical treatment, heat insulation and even air conditioning (summer cooling) for summer classes.

The national interest in health and safety results in closed, fireproof stair towers, ample ventilation, blackboard lighting, posture seating, larger windows and general high intensity artificial lighting.

The maintenance departments are now being given a hearing, in many instances in checking drawings and specifications before bids are received. These departments have learned the hard way that in the long run durability is more important than are first costs. They know the value of surfaces that are easy to clean and to maintain.

Although academic theories and practices may come and go, higher education is a permanent part of our American way of life. Although teaching needs may vary, the change in biological requirements of education cannot over the years be measured. Thus, with a change here and there, now and then, a well designed college building should still be a useful building 100 to 150 years from now. Physical changes to meet changing academic requirements are, however, inevitable and frequent. Today a college or university building not designed to provide such changes readily has its usefulness seriously limited. An experienced college architect designs the educational building on a skeleton structural basis to provide the maximum possibility for future changes.

The collegiate world is on the threshold of a decade of the greatest plant expansion in its history. May such construction be well built to serve many future college generations.



## MECHANICAL ACCOUNTING PAYS OFF

*Purdue University's centralization and mechanization have cut operating costs and effected savings in time. In addition, up to date balances on every account are provided each day as are daily reports of important financial information*

R. B. STEWART

Controller, Purdue University

WITH THE CONTINUAL GROWTH OF our university and the enlargement of its activities, the accounting records formerly in use became inadequate and inefficient. To correct this, an extensive study was made of the accounting procedure and of mechanical accounting equipment.

The result was the adoption of a plan under which all the accounting, including that handled more or less independently by each division, has been centralized, and all phases of it are being performed on accounting machines. The centralization has permitted a uniform procedure, closer su-

pervision and control, and far greater efficiency in operation.

The centralization and the entire mechanization of the accounting are effecting savings of more than \$10,000 annually in operating costs as compared with the old plan. The machines completely paid for themselves during the first year.

Of importance equal to the saving is the fact that the new plan provides up to date balances on every account each day, as well as comprehensive daily reports of important financial information. This has been accomplished at no sacrifice on the part of the in-

dividual divisions. In fact, more complete and up to date financial data are now furnished the various division heads than was formerly possible. Thus, there is closer financial control both by the controller and by the separate divisions.

## BUDGET AND CONTROL PLAN

• **DEPARTMENTAL BUDGET.** The appropriations to the various departments are divided into four parts and differently colored ledger sheets for each of these are kept in a departmental budget ledger: (1) salaries and wages (black), (2) supplies and

[illegible]

# FORMS USED IN PURCHASING

Requisitions for services and materials that cannot be filled from stores are sent to the purchasing department after being approved by the department head. The purchasing department obtains prices, enters them on requisition and forwards it to controller's office for approval. The university furnishes vendors with standard invoice vouchers.

REQUISITION		FORM NO. 7551	REV. 10-57
UNCLASSIFIED	UNIVERSITY OF MICHIGAN, ANN ARBOR		
DEPARTMENT: Military	DATE: 10/23/51		
APPROVED BY: [Signature]	DATE: 10/24/51		
VENDOR: General Supply Company, 436 State Street, Chicago, Illinois.			
QTY: 4	BOOKS	UNIT PRICE: \$11.00	TOTAL: \$44.00
In accordance with your quotation No. 104, our reference No. 752.			
COPY			

PURDUE UNIVERSITY		FORM NO. 7551	REV. 10-57
Lafayette, Ind. November 2, 1951			
TO: General Supply Company, 436 State Street, Chicago, Illinois.			
FROM: PURDUE UNIVERSITY			
SUBJECT: Books			
QTY: 4	BOOKS	UNIT PRICE: \$11.00	TOTAL: \$44.00
In accordance with your quotation No. 104, our reference No. 752.			
COPY			

PURDUE UNIVERSITY		FORM NO. 7551	REV. 10-57
REQUEST FOR QUOTATION			
TO: General Supply Company, 436 State Street, Chicago, Illinois.			
FROM: PURDUE UNIVERSITY			
SUBJECT: Books			
QTY: 4		UNIT PRICE: \$11.00	TOTAL: \$44.00
In accordance with your quotation No. 104, our reference No. 752.			
COPY			

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SUBJECT: Books			
QTY: 4	BOOKS	UNIT PRICE: \$11.00	TOTAL: \$44.00
In accordance with your quotation No. 104, our reference No. 752.			
COPY			



expenses (green), (3) repairs or maintenance (purple), (4) capital and replacement (red). These ledger sheets show at all times the outstanding orders, the total expenditures to date and the free balance for each appropriation in each department.

Purchase requisitions issued, invoice vouchers received and receipts or transfers are posted in detail to the departmental budget ledger daily with a typewriter bookkeeping machine. A journal is obtained as a by-product of this posting and is used as the source for posting the fund control ledger.

• **FUND CONTROL.** A fund control ledger sheet is set up for each of the 300 funds. All transactions—receipts or transfers, purchase requisitions and expenditures—affecting each fund are posted in total to these ledger sheets daily with the same machine used in posting the departmental budget ledger. From the fund control sheets, a daily report of free balances in the various funds is prepared for the university controller.

• **DISTRIBUTION OF EXPENDITURES.** An expenditure ledger sheet is set up for each of the four expense classifications within each department and also for federal and state classifications. The same colors are used for the four classifications as are used in the departmental budget ledger.

All expenditures of the same classification for each department are recorded on one sheet. This sheet shows the total expenditures for each fund and a grand total for all funds. Since each expense classification in a department usually affects fewer than three funds on the average, only four columns are provided for a tabulation of total expenditures by funds. In those cases in which more than four funds are affected, the first three columns are used for expenditures from the three most active funds and expenditures for all other funds are shown in the fourth column, the fund number being shown opposite each total in the "other funds" column.

A journal is prepared as a by-product of the posting of this ledger. Statements of expenditures are also prepared at the same time that the ledger is posted for those departments which require them.

• **VOUCHER REGISTER.** A voucher register sheet is maintained for each fund. Invoice vouchers that have been

approved are sorted by funds, numbered and posted to the voucher register sheets. The voucher register sheets show the amount of each voucher, the total for the month to date and the total for the year to date.

A journal is obtained as a by-product of this posting and provides a total by funds which is posted to the fund control and the accounts payable control accounts in the general ledger.

• **WARRANT AND WARRANT REGISTER.** Each day the vouchers are sorted by vendors and a warrant for each vendor is prepared with a typewriter accounting machine.

The remittance advice and warrant are written at the same time and a warrant register in duplicate is obtained as a by-product.

• **GENERAL LEDGER.** An account for each fund is maintained in the general ledger. Each day expenditures and receipts are posted in totals to the general ledger fund accounts. These accounts show the actual cash balance for each fund.

A journal of the posting of the fund ledger section of the general ledger is obtained as a by-product of the posting operation.

#### **BUDGETARY PROCEDURE**

• **PURCHASE REQUISITIONS.** Requisitions for services and for material that cannot be filled from stores are sent to the purchasing department after being approved by the department head. Prices are obtained by the purchasing department and entered on the requisitions after which the requisitions are sent to the controller's office for approval. Here, the requisitions are dated and given account and fund numbers. They are then sent to the budget clerk where they are sorted by funds and given requisition numbers. If funds are available, the budget clerk posts the requisitions to the departmental budget sheets affected. A budget control is posted from the total of all requisitions. The posting of a requisition increases the total of outstanding orders and decreases the free balance of the appropriation.

A journal is obtained as an automatic by-product of the posting. On the journal are printed the total of requisitions posted and other totals for proving the accuracy of the posting. These totals are accumulated automatically by the machine and are printed after all requisitions for each fund have been posted.

After the departmental budget ledger has been posted, the fund control ledger is posted from the totals of requisitions shown on the journal of the departmental budget ledger postings. After requisitions have been posted, purchase orders are written and sent to the vendor. (Requisitions for material supplied from stores are discussed under "Stores Accounting.")

• **INVOICE VOUCHERS.** The university requires that all invoices be rendered in duplicate on standard forms which the university furnishes. After invoice vouchers are approved and matched with the copies of purchase orders, they are sorted by funds, numbered and then posted to the voucher register ledger.

The total of the vouchers posted to each fund is accumulated by the machine and printed on the journal. After all postings have been made to the voucher register, the fund accounts in the general ledger are posted from the totals shown on the journal. A grand total of all vouchers is posted as a credit to the accounts payable account.

The invoice vouchers for each fund are next sorted by departments and then to expense classifications within each department. (If more than one expense classification is affected the voucher is sorted to the first classification; after being posted, it is filed with the next.) The vouchers are then posted to the departmental distribution ledger.

At the same time, and with practically no extra work, statements of expenditures are prepared for those departments that require them. These statements are usually furnished the department heads at the end of each month but may be furnished at any time as they are always up to date. Journals are also obtained as a by-product of the departmental distribution ledger.

The total of vouchers posted is accumulated by the machine. The agreement of this total with that obtained from the posting of the voucher register ledger proves that all vouchers have been posted.

The payments, taken from the commitment copy of the purchase order, are next posted to the departmental budget ledger. The posting of the payment reduces the outstanding orders, increases the total of expenditures and, if the payment amount is greater than the requisition amount which is

canceled, the free balance is reduced. If the voucher amount is less than the requisition amount, the free balance is increased.

As in the case of the posting of all ledgers, a journal is obtained as a by-product. All figures necessary for proving the accuracy of the posting are provided. From the totals shown on this journal, which are printed at the completion of the posting of vouchers affecting each fund, the fund control ledger is posted.

The invoice vouchers are sorted daily by vendors. A warrant with attached remittance advice is then prepared for each vendor and a warrant register is obtained. The machine accumulates a total of all warrants issued each day. This total is posted as a debit to the accounts payable account and as a credit to the bank account in the general ledger. The warrants are protected with a check protecting machine.

• **RECEIPTS AND TRANSFERS.** Receipts of cash by funds are reported each day by the cashier's department and are posted daily to the fund control ledger and to the fund accounts in the general ledger. The fund control ledger shows the free cash balance by funds and the general ledger shows the actual cash on hand by funds.

Transfers of budget amounts between classifications within a department (such as from repairs to capital and replacement) are prepared by department heads and require the approval of the controller. All other transfers are made at the end of the month on journal vouchers.

#### **LABOR AND JOB COST ACCOUNTING**

About 150 men are employed in the physical plant department, principally for repair and maintenance of university property. When this department receives a requisition for work to be done, an estimate of the cost of the job is prepared. After the estimate of cost has been approved, the physical plant department prepares a job order in triplicate to which an order number is assigned. At the same time, the information is typed on the job cost ledger sheet which is forwarded to the accounting department. The original copy of the job order is sent to the maintenance superintendent; the duplicate goes to the foreman in charge of the job, and the triplicate is filed alphabetically in the physical plant office.

• **LABOR CHARGES.** Each workman enters on a daily time ticket the job number and the time spent on each job at which he worked during the day. The accuracy of the workman's entries is checked by the foreman.

In the physical plant office the hourly rate and the total amount earned are entered on the time ticket and the tickets are then sent to the accounting department. Here, the accuracy of the calculations on the time tickets is checked with an electric calculator and the tickets are sorted by job numbers. The job tickets are then posted to the job cost ledger and the multiplication is checked by the machine.

• **MATERIAL CHARGES.** Invoice vouchers and extended stores requisitions are also posted daily to the job cost ledger. Each job cost ledger sheet shows at all times the total cost to date.

A comparison of the total cost to date with the estimated cost can thus be made at any time. If the cost is exceeding the estimate necessary, corrective measures can be taken at once.

Control accounts are kept in the cost ledger for total cost of all jobs in process. When a job is completed, the gross labor cost and the material cost columns can be added with an electric calculator to provide a breakdown of the total cost. A journal voucher is then prepared for posting to the departmental distribution ledger and the departmental budget ledger.

#### **STORES ACCOUNTING**

A stores ledger sheet showing both quantity and value is kept for each of about 5000 items in the stores department. Requisitions for material from stores originate in the various departments. As many as six items may appear on one requisition.

After requisitions have been filled by the stores department, they are sent to the general accounting office where they are posted to the stores ledger. In the posting operation the quantity shown on the requisition is subtracted from the previous quantity balance. The new quantity balance thus obtained is multiplied by the machine by the average price to obtain the new value balance. The value of the requisition is also extended and printed on it by the machine at the time the ledger sheet is posted. A mechanical proof is obtained that both the new quantity and value balances on the

ledger sheet and the extension of the requisition are correct.

A journal is obtained as a by-product of posting the stores ledger and extending the requisition. The journal furnishes the total value of all requisitions. This is posted to the stores control account which shows the actual value of all merchandise in the stores department.

After requisitions are posted, those for jobs in process are sorted and posted to job cost records, as shown previously. All other requisitions are sorted by departments and filed until the end of the month. At the end of the month the requisitions for each department are added and a journal voucher is prepared for the total. The journal vouchers are sent to the budget clerk who charges them against the budgets of the different departments and are later posted to the departmental distribution ledger.

#### **PAY ROLL**

The pay roll originates in each department. In the case of extra labor pay roll, requisitions are attached and require approval of the controller as well as of the department head.

The pay rolls are sent to the general accounting office where invoice vouchers are prepared. The invoice vouchers follow the routine previously described. The pay roll checks are then written and earnings records are posted as a by-product of check writing in the case of regular pay roll. Earnings records are posted separately for extra labor.

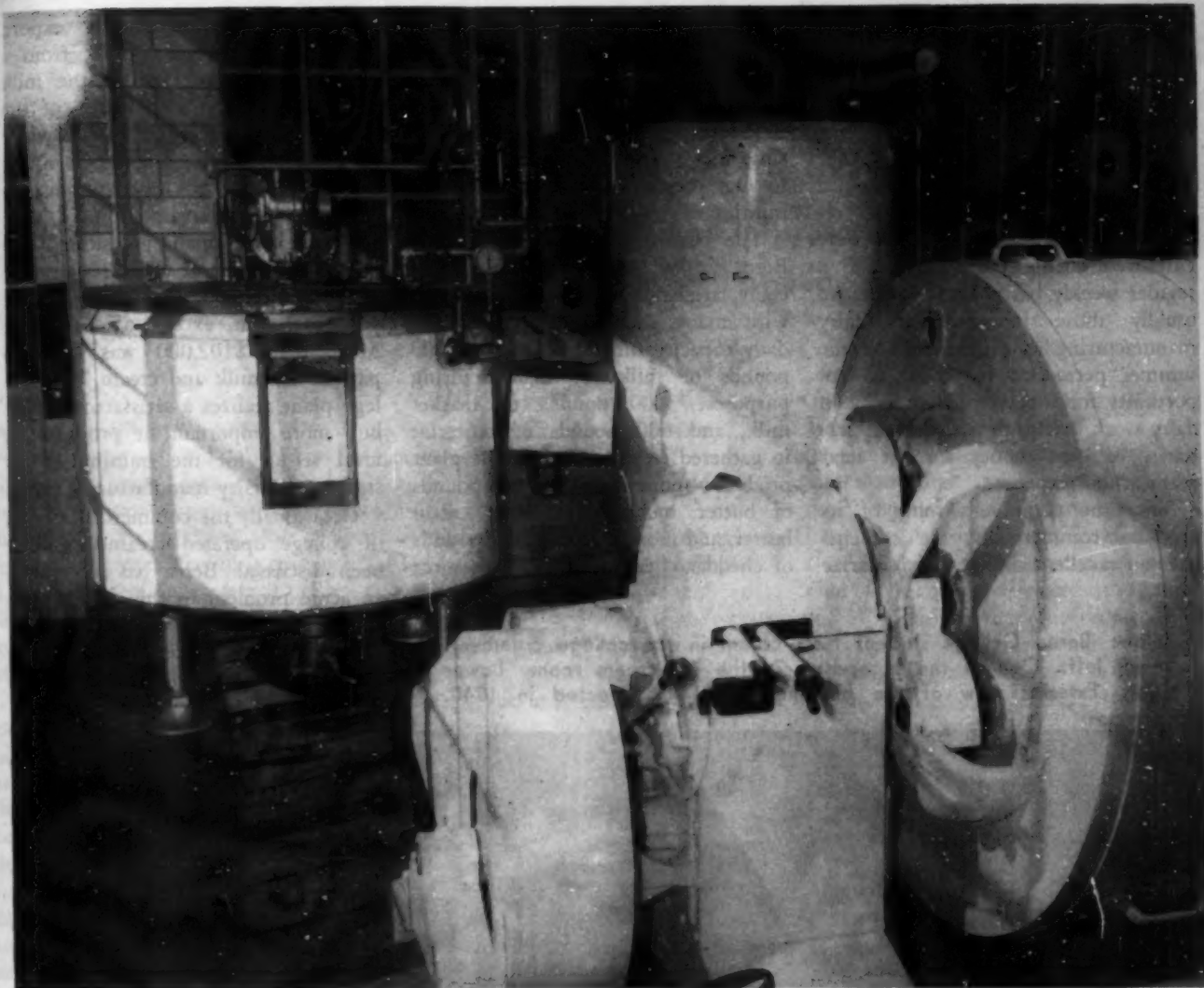
Funds are issued to the university treasurer to cover all the pay rolls and are deposited to the pay roll account.

#### **SELF-SUPPORTING ENTERPRISES**

The university has four self-supporting enterprises: the Purdue Memorial Union, residence halls, creamery and athletics. Complete subsidiary sets of books are kept by each of these enterprises. These subsidiary sets of books are so arranged that a financial statement can be made at any time. As these ledgers are posted, statements are written at the same time, and these statements are furnished to the department heads at the end of each month.

An accounts receivable ledger for the Purdue Creamery is posted daily. The ledger sheets, statement and journal are all written in one operation by the machine used for posting the ledger. Statements are mailed to customers at the end of the month.





## COLLEGE OPERATED *Creamery*

As told to

**ROY N. WALTERS**

by

**HOWARD B. MONIER**

THAT A COLLEGE-OPERATED CREAMERY can be a successful business venture as well as an educational enterprise is being demonstrated in the creamery operated by Berea College, Berea, Ky. The educational phase of the project is given the major emphasis.

The plant was established 18 years ago with a two-fold purpose: (1) to provide adequate laboratory facilities for teaching certain basic skills in dairying to the increasing number of "Ag" students entering the college; (2) to furnish a more satisfactory local market for milk. The only outlet for milk at that time was as gathered cream.

The enterprise started in a small way, the necessary equipment occupying a small area on the ground floor of the college's agricultural building.

The rapid increase in business and the growing interest in agricultural study made new facilities imperative.

A separate structure for the creamery plant was built in 1940. Since the plant was designed as a training laboratory for students, a greater variety of dairy products is made than is often handled in most commercial plants. Berea's creamery is equipped for the production of market milk, cheddar cheese, cottage cheese, butter, ice cream and a few minor products.

From the time the creamery was opened until the war when the number of men students was already de-

pleted, the creamery was operated almost entirely by students. It was unique in this respect. Employment was restricted to students majoring in agriculture.

Two competent men served as instructors and foremen. Their job was to train student workers, to supervise the work in general and to keep in operation the various processing activities during the student worker shifts which changed at two hour intervals. One group of students operated the plant the first two hours and then another group took it for the next two hours and so on throughout the day.

Many students remained in the department for two or three years of their college training. Effort was made to rotate them as often as possible on various jobs so that they



would become competent in several operations. It was not unusual to have a student butter maker, a student ice cream maker, a student operator of the pasteurizer and, in the summer, a student cheese maker.

The summer program was handled differently. Students wishing to remain in Berea for the summer were employed during the vacation on a regular weekly basis. These men were usually those interested in dairy manufacturing as a business and the summer period offered them an opportunity for concentrated training in dairy work. It also provided an opportunity to earn money for the next year's school expenses.

Since the plant sells some of its products commercially, the students have an excellent chance to familiarize

themselves with commercial production requirements as well as with the theoretical work in dairying. The instruction in dairying coupled with the practical training has made it possible for Berea's agriculture graduates to find excellent employment opportunities in the fields of dairying.

The volume of business at the Berea College creamery is not especially large but it compares favorably with many small milk plants. The daily capacity runs as follows: 15,000 pounds of milk for manufacturing purposes; 3000 pounds of market milk, and 600 pounds of butterfat in gathered cream. Last year the plant produced more than 123,000 pounds of butter, much of it sweet cream butter, and more than 112,000 pounds of cheddar cheese. Much of the latter

the government bought for export.

The creamery draws milk from a restricted area as most of the milk patrons live within 10 miles of the plant. Cream is received from a wider area with a radius of about 50 miles. There are 140 milk patrons and approximately 450 cream shippers. Most of these are small producers, few with herds of more than 10 cows.

Cash receipts for the plant last year were in excess of \$162,000. More than \$102,000 was paid to patrons for milk and cream. The college plant realizes a satisfactory profit but, more important, it provides an ideal set-up for the training of its students in dairy manufacturing work.

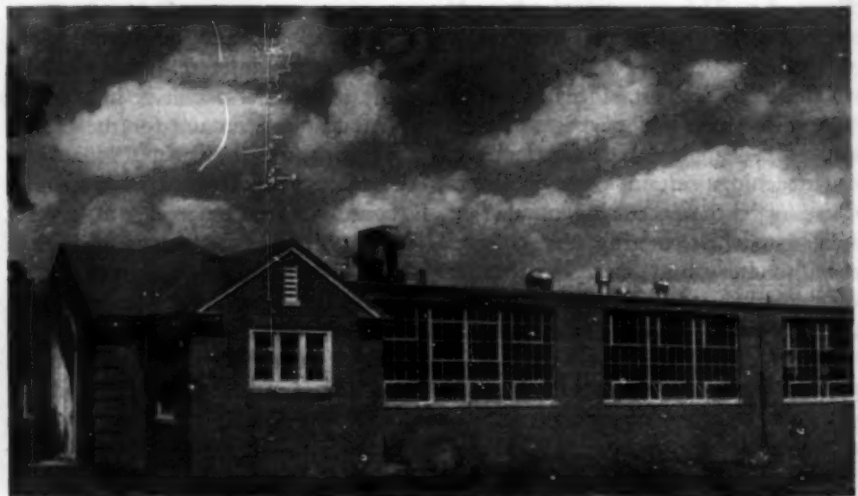
Occasionally the commercial aspects of college operated creameries have been discussed. Berea has never had an acute problem in this regard. The college's primary purpose in maintaining the plant is to provide a suitable laboratory for training and to furnish employment as a self-help opportunity to students.

Although first class products are manufactured, the college seeks to dispose of them through channels not in active competition with local concerns. Butter and cheese, for example, are sold either through wholesale trade channels or to a local jobber who operates a series of trucks to serve surrounding towns.

The only direct contact with the consumer is through plant sales of milk, milk by-products and ice cream and through a large retail milk route. Milk sales to stores and restaurants are handled through a jobber who buys the milk from the plant and delivers it to the local concerns.

Sales of dairy products prevent the enterprise from being a financial burden to the college.

Below: Berea College student tests cream in the college creamery. Lower left: One of the supervisors in the ice cream room. Lower right: Exterior view of the building which was erected in 1940.



# WHO SAYS THERE'S A CLASSROOM SHORTAGE?

## Proper scheduling of classes in present facilities should ease this bottleneck

JOHN GUY FOWLKES

Dean of the Summer Session  
Professor of Education  
University of Wisconsin

IMMEDIATE OR EVEN EARLY EXPANSION of classroom and laboratory facilities for most colleges and universities seems a wistful hope for most of us at this time. One of the real factors in determining the need for expansion of existing facilities and, hence, in justifying them is the degree to which the present plant is being utilized.

A question raised during recent months in many major institutions of higher learning is, "How well are we using our present building facilities?" In a few instances, an attempt has been made to determine just what utilization is being made of existing space; it seems likely that most of us in the near future will find it necessary to analyze again and again every nook and cranny on our campuses.

Some of the basic data needed in such a study are (1) name of building; (2) number of room; (3) purpose of room; (4) length and breadth of room; (5) shape of room; (6) lighting facilities and arrangement; (7) room ventilation; (8) type and number of seats; (9) blackboard space; (10) special laboratory or instructional equipment, such as projectors, turning tables; (11) entrances and exits; (12) size of classes at various hours of the day and night; (13) subjects being taught; (14) type of learning activity, such as lecture, discussion, quiz section, laboratory, seminary, and (15) type of teaching, such as lecture, discussion, quiz, experimental, routine laboratory.

From these basic facts, some of the derived or computed data that are necessary include (1) the square feet of floor space per room; (2) the cubic contents of each room; (3) the student station capacity, and (4) the difference between student station capac-

ity and the size of class being served during the various hours throughout the school schedule.

The term "student station," originally introduced by Morphet as "pupil station," is defined as any seat, machine, space at a table or proportion of space on a floor necessary for efficient student work during any period of time. "Student station capacity" refers to the maximum practical equipment or space which a given room contains or offers.\*

Attention is called to the fact that when type of room was suggested, a subdescription was included as follows: "in terms of existing type classification." The question can well be raised as to whether existing room designations on college and university campuses are as valid as traditionally have been accepted. Intelligent observation and corresponding decision show that the subject being studied, type of learning activity and type of teaching activity carried on in a room at a given period, and the possible other uses of a given room, may hold profitable possibilities for many institutions of higher learning during the coming months.

The whole question of the optimum and possible student station capacity of college building rooms has long needed much attention but particularly so at this time. Some interesting if not incongruous conditions prevail in this connection.

For example, in the largest classroom building on the campus of one of our major universities, there is a pair of rooms of exactly the same

length, width and height, located on the same side of the building—one on the second floor and one on the third floor. Both of these rooms are used for what is usually considered small class teaching or quiz section work. One of the rooms has tablet arm chairs for 36 students; the other room has seats in rows with pull-out writing platforms on the back of the seat in the row ahead and seats 71 students.

During recent years in this institution, considerable change has been made in the seating equipment in several of the rooms. In one room, some 23 by 27 feet with a 12 foot ceiling, there were 26 seats; there are now 40 of the type mentioned previously in the room with space for 71 students. I do not know whether the 26 tablet arm chairs or the 40 present seats are the proper number for this room; a few facts, however, may be helpful in coming to a conclusion.

For years a figure of 15 square feet of floor space per pupil was accepted as a good standard for pupil stations in a regular classroom in an elementary or secondary school. This figure was accepted on the basis of a teaching philosophy that elementary and high school pupils stayed "put" during a class period.

In light of the sharp change that took place in teaching philosophy, particularly among elementary school teachers, the figure of 15 square feet of floor space as an accepted minimum provision of floor space per pupil in elementary and secondary schools has been changed to between 25 and 30. The teaching philosophy of the colleges, however, still seems to be one which justifies the figure of 15 square feet of floor space per student, particularly in such subjects as elementary language classes.

At any rate, the point seems to be established that a great deal of attention might well be given to education-

Presented at the 1946 meeting of the Central Association of College and University Business Officers, Chicago.

\*Adapted from Morphet, Edgar L., "The Measurement and Interpretation of School Building Utilization." New York: Teachers College, Columbia University. 1927, p. 5.



ally acceptable seating facilities and steps to be taken to unify and execute the adopted philosophy and plan.

The utilization of instructional facilities, whether so-called classroom or laboratory, may well be attacked in terms of building utilization, room utilization and student station utilization. Obviously, room utilization demands a study of the number of hours each room is used during the day, and the study will be more revealing if made in terms of various sized rooms.

It was interesting to me to examine the accompanying study of room utilization in terms of hours per week on our own campus, made available by Alden W. White, director of records and information, University of Wisconsin.

Table 1 shows the number of classrooms, average hourly use per week

in the Biochemistry Building, to 36.3 in Bascom Hall. For rooms seating between 100 and 200, the corresponding figures are nine in Science Hall to 35 in the Education-Engineering Building, with an average of 20.7. For the rooms seating more than 200, commonly referred to as lecture rooms, the range is from 11 in both Agricultural Hall and the Biochemistry Building to 33 in the Chemistry Building.

The prevailing daily schedule of an institution eventually becomes the operating limit for room utilization. Quite legitimately, in terms of adequate space and desirable comfortable operation, college and university class schedules have been limited to the morning and early afternoon hours for most of the class work. In sharp contrast, however, science laboratories for years have been held largely in the

Table 2—New Official Class Schedule at University of Wisconsin.

Begin	End	Begin	End
7:45	8:35	1:20	2:10
8:50	9:40	2:25	3:15
9:55	10:45	3:30	4:20
11:00	11:50	4:35	5:25
12:05	12:55	5:40	6:30
		6:40	7:30
		7:40	8:30
		8:40	9:30

with the summer semester and to be continued indefinitely. This schedule was necessary not only for the extension of the official school day but also to make it possible for the large number of students to move from room to room and from building to building.

When the schedule was recommended for adoption at a general faculty meeting, an amendment was proposed to reduce the class period to forty-five minutes in length. From an educational standpoint, it is gratifying that the faculty by approximately 50 per cent majority rejected this amendment and adopted the schedule presented in table 2.

In addition to relatively objective or quantitative factors influencing plant utilization, there are other elements of the heart which influence classroom and laboratory utilization as much if not more than do the objective factors.

Primarily among these subjective elements are (1) operational relationships of administrative units; (2) the basic philosophy or attitude, and (3) the plain everyday habit of the instructional staff of a college or university.

The operational relationship of administrative units in an institution of higher learning, whether the institution is large or small, should be such that the educational opportunity and, therefore, the plant utilization are regarded first as a matter of overall unitary concern of the institution rather than the original function, domain or executive jurisdiction of departments or colleges. One of my pet "theme songs" is that the University of Wisconsin is a university and, consequently, the initial attack by all staff members of the institution on all matters must be from the standpoint of the university as a whole.

Colleges and departments have been established in institutions merely as trustees of all university obligations.

Table 1—Hours of Use of Various Sized Classrooms per Week at University of Wisconsin, April 1946  
Present Seating Capacity (seats of a wide variety of types)

	Under 51		51 to 100		101 to 200		Over 200		Total No. of Rms.	Average Use per Week
	No. of Rms.	Av. Use per Wk.	No. of Rms.	Av. Use per Wk.	No. of Rms.	Av. Use per Wk.	No. of Rms.	Av. Use per Wk.		
Bascom	29	39.3	9	36.3	5	24	2	20	45	36.9
North	11	37.3							11	37.3
South	1	33	3	27.3					4	28.8
Biology	4	32.5	1	35			1	22	6	31.1
Educ.-Engr.	10	33.2			1	35	1	18	12	32.2
Science	2	33.5	1	33	1	9			4	27.2
Sterling	12	27	2	21.5	3	19.3	1	30	18	25.4
Chemistry	6	35	2	29	1	24	1	33	10	31
Law	1	19			3	15			4	16
Hydr. Engr.	1	15							1	15
Chem. Engr.	3	17			1	19			4	17.2
Min. & Met.	3	9.9							3	9.9
Mech. Engr.	12	21.6	1	12	1	12			14	20.2
Agr. Engr.	1	18	1	18					2	18
Dairy					2	18.5			2	18.5
Agr. Hall	2	24			2	27	1	11	5	22.6
Biochem.	1	8	1	10			1	11	3	9.7
Genetics	1	19							1	19
Horticulture	1	23	1	30	1	21			3	24.7
King	1	21							1	21
Soils	1	23	1	26					2	24.5
Totals	103	30.8	23	30.4	21	20.7	8	20.6	155	28.86

Furnished by Alden W. White, director of records and information, University of Wisconsin.

by four sizes of room classifications in 21 buildings at the University of Wisconsin in April. Use of classrooms with less than 51 seats ranges from eight hours a week in Biochemistry Building to 39.3 hours per week in Bascom Hall, which is the largest building on the campus.

The average hourly use per week for 103 classrooms is 30.8 hours. Range of use for rooms seating between 51 and 100 is from 10, again

afternoon. Similarly, although relatively small in number actually, a significant listing of seminars has been held at night in many of our institutions of higher learning.

It seems clear that during the coming months, most colleges and universities will have to make drastic changes in their daily class schedules. The University of Wisconsin has established the official daily class schedule presented in table 2, beginning



Colleges and departments exist only for purposes of emphasis in terms of specialized knowledge and skill. The subdivisions of any institution of higher learning must be the constituent and component units of the parent administrative unit.

#### PLANT UTILIZATION

This point of view demands that college lines be cut across to as high a degree as is possible with respect to various educational patterns or programs available to the students of an institution. It is, therefore, a clear corollary that college and departmental lines must be cut across with respect to plant utilization. The question of whether many more rooms in institutions of higher learning might well be planned and equipped for general educational purposes instead of only one, two or three types of learning and teaching might well be considered. The possible interchange of equipment might also be studied.

The basic philosophy or attitude of staff members of an institution of higher learning becomes a determining factor in plant utilization in terms of the degree to which the urgency of a job to be done is recognized. It will be noted that up until now no direct treatment has been made of the unprecedented enrollments with which colleges and universities are now coping. It seems clear that during the immediate months and years that the number of young men and women who will be enrolled in colleges and universities will be limited only by the number of students the colleges and universities can handle.

As we all know, preeminent among the present enrollees in institutions of higher learning are thousands of young men and women who presented themselves for personal sacrifice in

order that you and I might retain that indescribably priceless heritage of membership in a democracy. So far as I am concerned, every effort must be exerted to provide the educational opportunity, both general and specialized, that the veterans of World War II need and desire.

Similarly, because I truly believe that educational institutions are the cultivating and developing agencies of human resources, do I feel it imperative that every effort be exerted to provide for the cultivation and development of the somewhat younger men and women who were not able to join their older brothers and sisters in making a personal sacrifice.

Such a philosophy demands abrupt disturbance of our traditional operation of colleges and universities. Possibly such disturbance will be the major factor in stimulating faculties to take sharper inventory of the educational program which they alone offer. It should be clearly understood that efficient utilization of instructional facilities rests with the faculties of institutions of higher learning and not with the administrative officers.

The responsibility of administrative officers with respect to plant utilization is one of gathering pertinent data necessary for the study of plant utilization and stimulating the faculties of colleges and universities to join in a study of the matter. After all, classrooms and laboratories have been created and are maintained only for the purposes of learning and teaching. Consequently, teachers and learners must be responsible for full plant utilization.

Habit, or probably more accurately the capacity for changing one's habits, is a very real factor in plant utilization. Strong preference for rising hours, work hours and quitting time, where

possible, is the due right of all human beings. The autonomy of college and university professors, however, imposes an implicit obligation to shift and change the personal practice of living if circumstances demand. Teachers have demonstrated in the past that they have such a capacity. It behooves administrative officers to be sure that the instructional staffs are aware of the utter necessity of such changes.

#### NEW CONSTRUCTION

Idle funds now lie available for the construction of new buildings of practically all kinds in most of our colleges and universities. Certainly, no one will gainsay that such plant facilities are sadly overdue. My own philosophy is that most administrators in most educational institutions have been far too timid in showing the need for and requesting corresponding funds for new construction. I cannot but feel, however, that at the same time there was some deficiency in the full utilization of existing plants long before the present emergency. Furthermore, I am not satisfied that we know enough about our building needs in terms of the educational functions they are to serve.

Is it possible that instead of waiting for the ideal permanent construction of the type to which we have become accustomed, it might be wise for us to move to a policy of erecting temporary buildings which will last for some ten to twenty-five years? Admittedly, such buildings would not be nearly as comfortable or as beautiful as the more permanent types. Is it not possible, however, that thousands of young men and women might get the educational opportunity which they so eagerly desire and so badly need, and which otherwise they might not receive, if we would erect temporary buildings?

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### DIRTY LINEN . . .

Should not be displayed in public. Gerald J. Hoar of Notre Dame describes the organization and operation of the university laundry in the October issue. Readers will find his article a helpful guide to solving their university laundry problems.

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# THIS SMALL COLLEGE HAS A FILM SERVICE

**JAMES S. KINDER**

Director, P.C.W. Film Service  
Pennsylvania College for Women

TO HEAR THAT A LARGE STATE UNIVERSITY has a thriving motion picture film service is not news, but to learn that a small independent college for women has a film service of a thousand titles is indeed news.

In 1938 the Pennsylvania College for Women set up a motion picture film service with a twofold function in mind. It was designed, first, to act as a materials laboratory for the campus and, second, to serve as a distributing center renting films to schools, colleges, universities, churches, clubs, industries and similar organizations.

## CAMPUS USE

The first purpose of the P.C.W. Film Service is to provide film, slide and record service for the faculty and students of the college. Faculty members may requisition materials for use in their classes at any time; projectors are available from the film office also. Each instructor may act as his own projectionist or, if he is not trained in the use of the machines, is provided with a projectionist from the film office. No charges are made against departmental budgets for this service; however, each of the three departments which make greatest use of the film materials buys one new film subject each year and adds it to the film library.

During the first year of operation of the film service, only the science departments made use of the materials laboratory. Year by year since 1938 other departments have asked for materials, until now nearly all of the college departments make at least nominal use of the resources of the film library.

In order of extensivity of use the departments are biology, physics, chemistry, home economics, health and physical education, French, music, speech, English, economics and art. College faculty members in some departments have had no experience or training in the use of audio-visual aids and, consequently, do not know

their value nor do they know the type of materials which have been provided and are available to them. To achieve faculty members' continuous use of films demands constant education.

## RENTAL SERVICE

The second function of the P.C.W. Film Service is to make available to schools and institutions film and record materials at library maintenance cost. The area served by P.C.W. is not limited geographically but the limitation of duplicate prints of titles imposes a natural restriction; therefore, although some requests from west of the Mississippi are accepted, in the main the service is more localized.

No priorities as such are set up but they exist in effect. Thus, priorities are western Pennsylvania, Pennsylvania, adjoining states, eastern states, southern states, midwestern states, other areas. Films and records that have a regular and constant use are never sent west of the Mississippi because the time consumed in transportation ties up the materials too long.

Practically every conceivable type of institution or organization has at some time or other called upon the P.C.W. Film Service for motion picture films. The calls from schools and colleges remain constant and stable. During the war years, heavy requests came from industry, civilian defense organization, induction centers, Red Cross chapters, organizers of bond rallies and other similar groups and organizations. During strikes a heavy demand comes from the plants for



materials to be used by foremen and other administrative personnel that are allowed in the nonoperating plants. Unions also call for materials for use with their members while on strike. The former requests are chiefly for materials of a training nature; the latter run largely to morale materials.

Space does not permit a complete listing of agencies which have used film materials, but a representative listing may be enlightening:

Seminars, colleges, universities, private schools, county agriculture agents, industry, service clubs, fraternal organizations, sportsmen's clubs, hospitals, housing authorities, U. S. employment offices, veterans' organizations, bond rallies, penitentiaries, industrial schools, boy and girl scout camps, recreation clubs, police and firemen, public schools, public libraries, churches, church camps, municipalities, civilian defense posts and councils, U.S.O., Red Cross, settlement houses, P.T.A.'s, O.P.A., teachers' institutes, army and navy recruiting centers, army camps and orientation centers, Y.M.C.A. and Y.W.C.A., department stores, garden clubs, granges.

## PUBLIC RELATIONS VALUE

From the foregoing description of usage and exhibitors, it can be seen at a glance that the public relations value of a film service is tremendous. In the annual report of 1945 to the president of the Pennsylvania College for Women, the following statement was made:

"Although the P.C.W. Film Service requests each user to indicate the number of people present at the showing of each film, attendance figures are quite inadequate. In 1938-39 we estimated that 211,000 individuals saw P.C.W. films. In 1941-42 the estimation was 581,250 and for 1944-45 the estimated figure is 3,000,000. We feel sure that this is not exaggerated since one film alone, Kids Must Eat, was shown to 75,000 in the month of May. The unusual use of this film was due



to the fact that it was given some publicity in a national broadcast of the Quiz Kids program.

"Other films were used by Dravo Corporation for a month at a time and were shown to the entire personnel which reaches well into the thousands. During this last year a very large number of films was used by clubs and bond rallies where audiences were always large. Incomes on films of this type have been negligible. As a patriotic service, no charge whatever was made for use in promoting bond drives and payroll savings, blood bank drives and other war uses."

#### ORGANIZATION, ADMINISTRATION

The P.C.W. Film Service is organized with an independent budget which is met by recovery of costs by rental fees and subsidy by the college. No service of this type will ever be a money making device; in fact it will never be able to break even. The deficit must be charged to public relations, a service to the community which the college can well afford to make. Rental rates on films vary from 50 cents upwards depending upon the original cost of a particular film, its permanent or transitory interest, its fragility and similar factors.

Administratively, the P.C.W. Film Service is headed by a part time director who fixes policies and budgets, decides upon purchases to be made and directs staff work.

A full time booker and librarian has charge of receiving orders, filling orders, billing and general office management. A third person devotes full time to maintenance of materials, such as film inspection, repair, cleaning and cataloging. Publicity, including preparation of a biennial catalog and a monthly news letter, is handled by a part time employee from another department in the college. Considerable peak-load help comes from students.

Headaches are plentiful in the film rental business. Films are delicate plastic materials and, although they do not break easily, they are easily marred and scratched. Every film is inspected after it is returned by a user. Repairs are made when needed or replacements are ordered if damage cannot be repaired locally.

Going to all kinds of users, the film slides and records are subjected to all kinds of treatment. Although some operators are highly skilled, a great many are not. Some machines are in good working order; others are in-

frequently used, are often dirty or oily and in need of overhauling. A dirty machine invariably means a scratched film. Broken film is easily repaired but nothing can be done about a scratched film.

Obviously, the longevity of films varies tremendously, depending upon the type of use to which they are subjected. In the main, silent films last longer than sound films because the projector is simpler to operate and runs at a slower rate of speed. Black and white films last longer than color films, scratching on the latter being much more noticeable. Sound tracks are seldom damaged. Disk records are damaged by scratching and breaking.

They may be used on turntables of the wrong speed, or with worn needles or the arm may be too heavy.

All film services charge the user for film damage which is beyond normal wear. The matter of assessing these damages to the user, convincing the user that he actually damaged the film and making the collection is a nuisance. The P.C.W. Film Service is now handling this detail by carrying an overall comprehensive insurance with a standard insurance company. Each user is then charged a 10 cent per reel insurance fee which protects the user against paying for actual damages and also enables the film library to recover its premiums.

Routine inspection is observed when films are returned by users. Needed repairs are made or replacements ordered. Broken film is easily repaired but nothing can be done if film has been scratched.



Board of Education, Rochester, N. Y.



Stephens College





# WHAT COLLEGE PROPERTY IS TAX EXEMPT?

M. M. CHAMBERS

American Council on Education

DECISIONS OF THE HIGHER COURTS in various states keep us abreast of the "growing edge" of the law, complex and ever-changing to fit modern conditions. Current cases must be understood, of course, as having a local setting, with their outcomes depending upon the statutes and precedents in the particular state concerned. Eventually, as they accumulate and group themselves into patterns of similar judicial reasoning, they come to indicate general trends.

## STADIUM AT RUTGERS

A New Jersey statute of long standing provides for the exemption from taxation of "buildings actually used for colleges," together with the surrounding land essential to their use, not exceeding 5 acres.

In 1935 Rutgers University acquired 138 acres across the Raritan River from the main campus for use as athletic fields and constructed thereon a bowl having a seating capacity of 20,000 spectators with a field house as a part of its east wing. The local township taxing authorities assessed this property for the year 1942 at \$15,625 for the land and \$60,000 for the improvements. The university contended that the property was exempt and, in any event, was assessed in excess of true value. Litigation resulted in a judgment completely adverse to the university in 1946.

Judge Colie of the supreme court wrote the opinion: "There is no doubt but that physical education is a proper field for instruction in a modern college, but even so it is difficult to see how these concrete stands for spectators and the field house beneath one of them can be said, in the words of the statute, to be 'buildings actually used for colleges.' . . . We fail to see any necessity for the construction of stands to accommodate 20,000 spectators when the enrollment of the university is under 1700. The fact that provision is made for such a large number of spectators, each of whom is

admitted upon payment of an admission fee, points to the conclusion that the stadium was designed with an eye to spectator revenue rather than with an eye to the physical education of the student body. . . . When the legislature wrote . . . 'actually used for colleges' it meant something more than an occasional or incidental use. . . . In the present case the stadium was built for the primary purpose of providing a place where the general public, on payment of an admission fee, might indulge its fancy to witness athletic contests, and any use for the purpose of the educational function of the university was merely incidental to the primary purpose."<sup>1</sup>

On the issue of a proper assessed value, a real estate expert had testified that he did not think anyone would buy the stadium at any price, and counsel for the university argued for a valuation of \$3000, which was the value of a building formerly on the land and since demolished. Brushing aside this contention as preposterous, the court concluded: "There is evidence that the cost of the stadium was between \$1,000,000 and \$1,250,000, and in the light of that fact we fail to see how an assessment of \$60,000 on the stadium can be attacked as in excess of true value."

## PRESIDENT'S HOUSE

Under the same New Jersey statute, Rutgers University was accorded a favorable judgment in a slightly earlier case involving a different species of property for a different use. In 1939 the university acquired an 11 acre tract on which was situated a large dwelling house, the purpose being to provide a residence for the president of the university near the campus. The property was assessed for taxation in 1940 by Piscataway Township, and the university thereupon asked the board of tax appeals to set aside the

assessment on the building and 5 acres of the curtilage.

The evidence showed that the house was actually used not solely as a private residence for the president and his family but almost daily for such purposes as housing guests of the university, for dinner meetings of various administrative, faculty and student organizations and groups and for meetings of the board of trustees. The trustees had remodeled it, enlarging its kitchen and dining room facilities to suit those very purposes. That these were proper and necessary educational purposes of the university was successfully maintained, although the controversy was carried to the highest court of the state. In 1944 the judgment setting aside the assessment, as to the building and 5 acres, was finally affirmed.<sup>2</sup>

It is not uncommon for a college or university to own a number of dwelling houses and use them as residences for faculty members. In several states such properties usually have been held to be properly tax exempt, especially where the professors occupying them pay no rentals and the houses are not used exclusively for strictly private purposes. In 1942 the supreme court of Georgia decided that several houses owned by Atlanta University, situated immediately across the street from its main campus and occupied by members of the faculty rent free, were exempt. The value of the perquisite was taken into account in determining faculty salaries, and it was shown that the houses were frequently used for conferences between students and faculty members.

In the same case it was determined also that a vacant lot, in close proximity to other buildings used for college purposes, being too small for a regular football field or baseball diamond and actually used only by stu-

<sup>1</sup>Trustees of Rutgers University v. Piscataway Township in Middlesex County et al., (N. J. Misc.), 46 A. 2d 56 (1946).

<sup>2</sup>Trustees of Rutgers College v. Piscataway Township, 20 N. J. Misc. 127, 25 A. 2d 248 (1942); affirmed, 129 N. J. L. 261, 29 A. 2d 389 (1942), and 131 N. J. L. 158, 35 A. 2d 711 (1944).

dents for playing outdoor games, was properly exempt.<sup>3</sup>

#### EXEMPTIONS BY CHARTER

Aside from questions of exemption under general statutes, it must be remembered that many older institutions of higher education operate under special charters containing irrevocable provision for exemption of all their property of whatever kind. Two recent decisions, in Minnesota and Missouri, sustained such provisions as against the argument that the state cannot bargain away its taxing power.

Hamline University has a territorial charter of 1854, stipulating that "all corporate property belonging to the institution, both real and personal, is and shall be free from taxation." Relying on this clause, the university sued to register clear title to tax delinquent lands in Hennepin and Ramsey counties, held as investments and not physically used for educational purposes. The Minnesota supreme court decided that the charter exemption was a contract which the state could not impair. The conclusion is in harmony with earlier precedents in Minnesota. The contract was unaffected by the adoption of the state constitution in 1857 and was not avoided by the fact that Hamline University suspended operation from 1869 to 1880, because the charter was never repealed or revoked, and the period of suspension was not sufficient to work a forfeiture of the charter by a nonuser.<sup>4</sup>

In Missouri, William Jewell College brought an action in equity to declare void the assessment of real estate taxes on its lands in Worth County which had been acquired from a debtor of the college in settlement of a mortgage. The college alleged that its practice was not to invest endowment funds in real estate, except to protect its loans, and that it did not customarily hold such real estate longer than necessary to procure a proper sale. A broad exemption clause in the college charter of 1849, as amended in 1851, was relied on and sustained by the state supreme court as a contract inviolable under that clause of the United States Constitution which

#### Dartmouth's Alumni Plan

Family ties hold Dartmouth College alums close to the heart of alma mater. A highly perfected system of class organizations, secretaries' and treasurers' clubs and other carefully fostered work groups gives this college pre-eminence in alumni relationships. Charles Widmayer, Dartmouth's alumni secretary, is to describe in October how helpful 17,000 organized alumni can be

prohibits the states from impairing the obligation of a contract.<sup>5</sup>

Chief Justice Ellison dissented without opinion. The opposing argument, which failed to impress the majority of the court, was that the Missouri general corporation act of 1845 reserved to the state the right to alter or repeal charters granted under it; and if this were applicable, the William Jewell College charter was actually amended by successive new state constitutions of 1865 and 1875, both of which restricted the field within which the legislature could grant tax exemptions. This is the same argument that has repeatedly come to naught in earlier similar cases in Missouri courts and in federal courts.

#### SPECIAL TRUST

Texas Christian University receives the income of the Mary Coutts Burnett Trust, set up in 1923 to hold and operate a large estate until 20 years after the death of the last survivor who signed the trust indenture, whereupon the university will receive the entire principal of the trust. In this situation the city and school district of Fort Worth sued to collect personal property taxes for 1941 on notes and mortgages payable to the trust.

The Texas constitution and statutes exempt from taxation "the endowment funds of institutions of learning and religion not used with a view to profit." Real property acquired by foreclosure is exempt for two years only. The state supreme court decided that because the income from the notes and mortgages in question went into a common fund which was paid annually to Texas Christian University after expenses were deducted the instruments were properly exempt from taxation. The income cannot inure to

the private profit of any individual and "private profit," not merely "profit," is what is meant to be excepted by the constitution and statutes; for the sole purpose of an endowment fund is to produce income.<sup>6</sup>

The foregoing cases illustrate only a few of many factors in the currently complex picture of tax exemptions. They serve to indicate that in some instances the exemption extends to all property of an educational institution, including real and personal property not actually used by the institution for any purpose except income producing, however large; while some states restrict the exemption to the educational plant itself and some even define it to exclude parts of the institutional plant not primarily used for strictly educational purposes. The questions as they arise are determined not only by the constitutions and general statutes of the states but also by the provisions of special charters. Often they are further complicated by the terms of special trusts under which the institution acquires a limited or conditional present or future interest in the property in question, which may be more or less heavily encumbered with obligations to private beneficiaries or private creditors.

As this grist flows through the higher courts, assuredly it will be keenly interesting to observe the further development of American law with respect to the soundly established principle that the state properly encourages reputable nonprofit educational institutions with a modest subvention in the form of freedom from taxation.

<sup>5</sup>Harris et al. v. City of Fort Worth et al., 142 Tex. 589, 180 S.W. 2d 131 (1944); reversing Same (Tex. Civ. App.), 177 S.W. 2d 308 (1944).

<sup>3</sup>Elder et al. v. Trustees of Atlanta University, 194 Ga. 716, 22 S.E. 2d 515, 143 A.L.R. 268 (1942).

<sup>4</sup>Trustees of Hamline University v. Peacock, 217 Minn. 399, 14 N.W. 2d 773 (1944); certiorari denied, 323 U.S. 741, 65 S.Ct. 73, 89 L.Ed. 46 (1944).

<sup>5</sup>Trustees of William Jewell College of Liberty v. Beavers, 351 Mo. 87, 171 S.W. 2d 604 (1943).



# The MANAGEMENT of COLLEGE DINING HALLS

CLAUDE M. REAVES Jr.

Business Manager, Huntingdon College

FOOD SERVICE IS ACTUALLY A COMPLICATED business requiring knowledge of (1) manufacturing—processing and preparing foods; (2) engineering—efficient layout of kitchen and dining hall, refrigeration, heating, air conditioning, ventilation, sanitation, maintenance of equipment; (3) merchandising; (4) personnel practices; (5) decoration; (6) purchasing; (7) salesmanship, and (8) administration.

## QUALIFICATIONS OF MANAGER

Whether dietitian or food service manager, the following qualifications are essential to the person who should handle the actual day-to-day operation of this enterprise:

**TRAINING.** B.S. degree from a college or university with a major in institutional management. He or she should have had courses in menu planning, in ordering food and supplies, in quantity food production and service, in operation and care of equipment, in the sanitary problems of food handling, dishwashing and house-keeping, in training and directing food service employees, in accounting and in principles of nutrition.

**EXPERIENCE.** At least one year's experience under careful supervision in any of the following: school lunchroom, college or club dining hall, hospital feeding, cafeteria, restaurant or industrial plant lunchroom.

**PERSONAL QUALIFICATIONS.** Good health, affability, ability to carry on under pressure, ability to get along with people, judgment, dependability, adaptability and, above all, a sense of humor.

The dietitian or service manager who heads the organization and directs its day-to-day operation should obtain, train and direct the personnel in the various departments, such as receiving, storeroom and records, cooking, baking, butcher shop, servicing, dishwashing, cleaning and garbage disposal.

Perhaps the most important requirement of a successful manager is that

he have the confidence and utmost cooperation of the cook. Well cooked and seasoned foods will be eaten; poorly cooked foods will cause waste and excessive expense, not to speak of loss of vitamins and essential mineral elements.

The manager, in some instances, has supervision of the hostess, whose responsibility is that of supervising the activities of the dining halls. The hostess should work with the manager or dietitian, although it is my belief that she should be under the joint direction of the dean of students and the business office rather than of the dietitian or service manager exclusively.

## DUTIES OF HOSTESS

1. The hostess should advise the dietitian of changes in class schedules which will affect the number to be served in the dining hall as well as the number to be served on week ends.

2. She should assign seats in the dining hall, direct table service and see that seats are taken promptly at mealtime.

3. She should see that the style of service prescribed is adhered to and she should be responsible for the general conduct in the dining hall.

4. When there are visitors, she should report the number and the charges.

5. She should be authorized to make any adjustments and to answer all criticisms.

6. She is, in essence, the liaison between the dietitian and the patron, and, likewise, between the patron and the business office.

## MENU PLANNING

Proper menu planning results from considerable study of available supplies and their most economic and effective utilization, thereby assuring the student of a nutritional and adequately balanced diet.

Two main considerations are required: the first is to meet the energy requirements by having good variety inexpensive foods on the menu and by serving generous sized portions; the second is to be sure that each menu contains sufficient protective foods.

A complete and balanced breakfast, lunch and dinner should be featured and priced to fit within the financial limits of the average student. This price should not be changed during any given school term, thereby assuring the student of a well balanced board for a fixed sum.

Menus should be made as far in advance as market conditions permit. Foods and supplies for each meal should be requisitioned from a well regulated stockroom where perpetual inventories are kept. By extending the costs of these items and by adding the cost of perishables bought daily, it is a simple matter to have at the end of each day the exact financial report of the day's food cost operation. Overhead and other daily costs are known so that the manager is thus constantly informed as to the cost of operation.

Another essential step in successful cafeteria operation is the making of portion counts and calculations so that unit costs and selling prices can be accurately determined.

In a dining hall, one is forced to operate upon a definite budget. Elimination of waste and the most rigid conservation in food preparation are vital factors for good operation. Ways and means should be found for increasing the production per worker or per dollar of wages and per dollar of other expenses. This aids in giving desired flexibility in operation cost.

Another important factor is that of buying. The dietitian should buy those items which are needed for day-to-day operation, such as produce, meats and bread. However, when the quantity and expenditures are large, such as for canned goods or equipment, the purchasing agent of the institution, upon recommendation and advice of dietitian, should buy.

It is taken for granted that the enterprise will be properly housed in buildings suitable for food preparation and service, with adequate hot water, plumbing facilities, drainage and ventilation and with suitable floors and walls. The best equipment available should be installed and the kitchens and dining halls should be kept up to date in equipment and in methods of service.



# QUESTIONS AND ANSWERS

## College Nursery

Question: Should a college provide a nursery service for children of veterans where both the husband and wife are enrolled as students?—D.L.T., Minn.

ANSWER: The answer to this question is strictly opinion. Colleges should do everything possible to assist G.I. students to obtain their education. If physical facilities are available and if it can be conducted by the teacher training department of the college without jeopardizing the general college program for the student body, a nursery school can help the teacher trainees as well as the parents. If the nursery takes away space that is needed for college students, however, the answer is no. The determining factor should always be "the greatest good to the greatest number of college students."—CHARLES W. HOFF.

## Marking Glassware

Question: Can you advise me as to how to place inventory control numerals on chemistry department glassware so that they will not be affected by heat, chemicals or moisture?—L.G., N.Y.

ANSWER: Laboratory heat resisting glassware may be marked permanently by using a rubber stamp such as an inking stamp. While the ink is still moist, finely powdered litharge (PbO) is dusted on the stamp. Excess PbO may be removed by use of a camel's-hair brush. When all of the excess lead oxide is removed, the moist printed part (coated with the oxide) is gradually heated until the glass is a dull red. The lead oxide leaves a permanent and easily readable mark. Of course, it is well to re-anneal the glassware.

The color of this marking is black. A finely powdered mixture of chromous oxide ( $\text{Cr}_2\text{O}_3$ ) and sodium chloride (2 parts  $\text{Cr}_2\text{O}_3$ , 1 part NaCl) makes a green color. Copper oxide, as well as iron oxide, is sometimes used for a red color. For soda lime glass or other so-called "soft glass" an etching compound is very satisfactory for marking glassware. This compound may etch heat resisting glass also. It has been used with success in our hy-

draulic research laboratory for marking glassware. A small hand sized vibrator is also an efficient glass marking instrument. Too, we have employed small sand blasters for marking glassware; likewise, a small motor driven dentist tool with emery burrs can be used.—JOHN H. THOMAS.

## Faculty Housing

Question: Should a college provide suitable dwellings for faculty members, particularly those in the lower salary brackets?—A.H.K., Mich.

ANSWER: This question requires a double answer, for short term and long range considerations are involved. From the short term point of view it can be said that colleges today, with unprecedented enrollment expansion, must have staff if they are to carry their loads and, in the face of the nationwide housing shortage, they cannot obtain the staff unless the staff members have places to live.

"Find me a place to live, and I'll come" is the commonest response to offers these days. It is imperative, therefore, that institutions go as far as they possibly can in providing living quarters for faculty members, and surveys show that institution after institution is embarking upon housing projects for staff members in the present emergency. It is particularly important that such help be given to junior members of the faculty.

From the long range point of view, provision of faculty housing may be regarded as a welfare activity, along with good insurance and retirement programs, that gives to staff members an added sense of security. Furthermore, in the face of the relatively low salary scale characteristic of the profession, housing assistance becomes a factor that gives to the institution considerable competitive advantage. Since the strength of colleges is built through the infusion and retention of young faculty blood, it is particularly desirable that younger staff members be kept in mind in the development of long range housing programs.—MALCOLM M. WILLEY.

## Laundry Service

Question: Should a college operate a laundry as a service for its students or merely as a maintenance feature for tablecloths, napkins and similar items?—T.R.F., Iowa.

ANSWER: The type of educational institution determines the answer to this question. The college, university or school having complete control over the activities of the student can offer this vital service to him. The laundry and dry cleaning service, when operated as a department of the school, can be a profitable operation and at the same time be supplied at a reasonable cost to the student.

If the latest and best accepted methods are used, a definite saving to the individual in the form of textile conservation is realized, and the prompt regularity of service established on a fixed schedule is appreciated by him.

Most educational institutions operate a laundry service which takes care of all the linen supply needs and, in view of the ever increasing demand: on commercial laundry and dry cleaning plants, these service departments properly managed would be a distinct asset to schools throughout the country. All such departments present certain local problems peculiar to their locations, but usually they are solved in a very satisfactory manner.—GERALD J. HOAR.

## Cafeteria vs. Family Style

Question: Is the trend toward cafeteria feeding or toward family style service in college dining halls?—B.J.S., N.D.

ANSWER: Cafeteria service is generally accepted for breakfast and lunch. Many dining halls have been forced to use cafeteria service for dinner also because of difficulty and cost of obtaining student or regular employees for waiter or waitress service. Waste is also higher in table than in cafeteria service. The opinion of many residence hall managers is that the social features of table service make it desirable to use this type for the evening meal if funds permit.—MARY DEGARMO BRYAN.

# THE ROVING REPORTER

## Cigaret Butts

Because of the "no smoking inside of buildings" rule, many colleges suffer in appearance from cigaret butts scattered about building entrances. The problem of fire hazard is added to that of eyesore.

The problem has been solved at Kansas State College in G.I. fashion by installing "outdoor ash trays" beside the building entrances. These containers have been constructed by welding strap iron to a 1½ inch pipe. The strap iron is shaped to hold a removable No. 10 can which, when set in place, is 30 inches above the ground. The pipe is anchored into a cement block buried in the ground and each can and holder are painted green to blend with the surrounding shrubbery.

The building and repair department of the college made and installed 30 of these ash trays at an overall cost of \$90. The idea originally developed when a student in the School of Veterinary Medicine, Norvan Meyers, suggested that some kind of containers be used. He was able to have 300 students sign a petition which was approved by the student council.

## Cutting the Grocery Bill

Inflation fighters should "stop, look and listen" to the story of how veterans at Alabama Polytechnic Institute are successfully fighting high food prices with a co-op of their own. And if you know of any group that organized, sold stock, supplied, staffed and opened its own grocery store in just 33 days, let us hear about it. The members saved 30 per cent in their grocery bills during the first six weeks.

Dismayed over current high prices of food, the 500 student veteran families in Auburn decided that the answer was a grocery store of their own. A.P.I. President L. N. Duncan agreed to let the group have the use of a vacant building on the college campus and the race was on. Many local merchants gave the veterans their blessings in the undertaking.

Through selling memberships at \$20 to veterans with families, the group immediately raised \$2500 working capital. This amount was spent for fixtures and stock. Since only families that have purchased membership may buy groceries, membership is expected to continue to grow. Clerking at the store will be on a cooperative basis, with all members taking their turns. A student veteran, Jack Powell, was employed by the group as store manager.

An A.P.I. faculty committee composed of P. M. Norton, coordinator of veterans' affairs; Kirtley Brown, director of student affairs, and W. Travis Ingram, business manager, assisted the organization plans.

## Profs Can Flunk, Too

When a professor at the University of Wisconsin runs home in tears to his wife, it does not mean he has been fired. He has probably been "flunked" by his students.

This reversal of academic procedure was thought up by the student board's academic relations committee and gives the long-hoped-for opportunity of the students to "tell off" their professors. Questionnaires, distributed to students, ask that they rate their teachers, teaching methods and efficiency and discuss such things as cribbing for tests and social attitudes acquired at the university.

## Research Foundation

Incorporation of a research foundation at Montana State College under the nonprofit corporation laws of the state now makes it possible for the college to carry on research projects requested by public spirited donors who provide funds through gifts or bequests, according to the trustees of the foundation.

In the past, the trustees explain, regulations governing the use of college funds made it impractical in many instances for the institution to conduct such investigations with donated funds.

With the incorporation of the research foundation, money received from donors will be kept in the foundation treasury to be used exclusively for the research work specified.

Research work conducted under direction of the foundation will be separate from that done at the college by the Montana Agricultural Experiment Station. When a research project is set up by the foundation, the investigational work will be done or supervised by regular members of the college faculty who are qualified in the particular field involved.

Under its articles of incorporation, the foundation has the authority to accept money or property received by gifts, devise, bequest or in other manner and to be used either outright or as a trust fund. It can purchase, sell and lease real or personal property for the benefit of the foundation.

The foundation is also authorized to create, purchase, hold and sell patent rights for inventions, designs and copyrights which may be assigned to it and to issue licenses for the exercise of rights relating to the patents. Money received from patents, inventions, designs and copyrights is to be used by the foundation for furthering research.

## For Better Living

Wives of veterans living in Sunflower Village, the University of Kansas' housing unit for married veterans, are learning how to make their homes more livable by attending a series of lectures on "Interior Decorating and Design in the Home."

The lectures, given by various professors of the K. U. School of Fine Arts, are held every other Thursday night at the K. U. wives' clubroom in the Sunflower Village. On alternate Thursday evenings, lectures on general topics, including economics, home management, psychology and child care, are given by professors from those departments of the university. The lecture series is being presented without charge and will continue indefinitely.



# NEWS

**Pointers on Temporary Facilities' Applications . . . More College Towns Under Rent Control . . . Tuition and Fees Rise From 15 to 50 per Cent . . . Einstein University Founded . . . Nine Universities Incorporate to Handle Atom Research . . .**

## In Applying for Mead Act Aid

Passage of the Mead bill (S. 2085) by Congress and its signature by President Truman made available an appropriation of \$75,000,000 to colleges and universities to aid in the construction and provision of temporary educational facilities. Dr. Ernest V. Hollis, specialist in statewide programs of the U. S. Office of Education, will direct the operation of the plan for the disbursement of these funds.

The following statements may provide some orientation for a careful study of "Information for Applicants."

1. F.W.A. plans for allocating educational facilities assure an equitable distribution to institutions of each state through apportioning funds to states on the basis of the number of veterans approved for training by the Veterans Administration.

2. Because 90 per cent of the veterans in school are enrolled in colleges and pre-collegiate vocational schools, F.W.A. is currently limiting applications to these two groups of educational institutions.

3. The order in which F.W.A. plans to provide facilities certified by representatives of the U. S. Commissioner of Education usually will be determined by acuteness of need, by availability of the facility, by availability of funds and by the supply of labor and material.

4. It is more important for an institution to file a factually documented justification of actual emergency needs occasioned by the presence of veterans than it is to be first in filing. Few facilities can be supplied before the opening of the 1946 fall session.

5. The finding of need will be made by the Office of Education representatives located in each division

office, Bureau of Community Facilities, Federal Works Agency.

6. On an institution's request the "Justification of Need" form will be mailed from the F.W.A. division office, not from the Office of Education.

7. Office of Education representatives will make certifications through the legal entity of which a school or college is a part. This means, for example, that each college under a board of regents may prepare an individual justification, but it must clear through the central administrative or coordinating machinery of the legal unit.

## Incorporate to Handle Atom Research in Northeast

Nine eastern universities have formed Associated Universities, Inc., to operate under contract with the federal government the new Northeast National Laboratory, one of three research centers in nuclear physics.

The Argonne National Laboratory at the University of Chicago is already in operation under a similar management contract. A third national laboratory is planned for the West. The Clinton Engineer Laboratory at Oak Ridge, Tenn., is also available for research projects in connection with the coordinated national program.

Edward Reynolds, vice president of Harvard, has been named president of Associated Universities, Inc. On the executive committee are George A. Brakeley, vice president and treasurer of Princeton; P. Stewart McCauley, provost of Johns Hopkins; Dr. R. F. Bacher of Cornell, and Dr. J. R. Zacharias of M.I.T.

The site of the northeastern laboratory will be at Camp Upton, New York, Maj. Gen. Leslie R. Groves, commanding general of the Manhattan Project, has announced.

## Schools Will Get More Army Goods

An expanded army donation program to schools and colleges training veterans was announced August 28 by the Federal Security Agency.

In contrast to the previous availability of limited types of mechanical equipment and tools, the army has expanded its list to include such items as refrigeration and air conditioning equipment and electronic, drafting and laboratory equipment.

Regulations require that all donated equipment be used exclusively for courses in vocational training and instruction. Costs to educational institutions are packing, handling and shipping charges. Such army property will be located, screened and "frozen" for a fifteen day period.

State educational agencies for surplus property will make available to educational institutions within each state the detailed procedures to be followed in making application for donations.

## Tuition and Fee Increases Range From 15 to 50%

A recent survey by the *New York Times* of 40 representative institutions shows that the cost of college living has in some cases increased as much as 50 per cent through increases in tuition and fees. Most tuition increases range from 15 to 30 per cent, co-incident with the greatest enrollment increase in 300 years.

Reasons given for the increases include higher salaries, increased textbook and publication costs and additional charges in operating a college program during an inflationary period. Some institutions confessed that the fact that veterans are entitled to \$500 a year tuition under the G.I. bill has had a bearing on the large increase.



Institutions reporting increased tuition and fees, or the intention to increase such fees, include the University of Chicago, Yale, Princeton, Tulane, Columbia, New York, Colgate, Cornell, Union, Middlebury and Colby.

## **Congress Approves U.N.E.S.C.O. Among Other Bills**

Enacted before the 79th Congress adjourned was Public Law 305 assuring our participation in the United Nations Scientific, Educational and Cultural Organization and determining the method of selection of an advisory committee of 100 persons.

Amendments to Public Laws 346 and 16 were passed increasing subsistence payments to veterans, making the cost of teaching personnel plus other established fees the optional basis of payment to institutions and removing the age and deduction limitations from the original measure.

Establishment of a navy R.O.T.C. along the lines set forth in the Holloway plan was also voted on favorably.

## **Teachers' Colleges Can Take 6015 Veterans**

Openings for 6015 veterans existed in 34 teachers' colleges in mid-August, according to a report by the American Association of Teacher Colleges submitted to the Veterans Administration.

Walter E. Hager, chairman of the association's committee on standards and surveys, said that these schools could accept 10,100 more students if they could obtain additional faculty members, equipment and housing. Forty-three teachers' colleges reported full enrollment but advised that they could accommodate 16,788 additional students if faculty, equipment and housing shortage were relieved.

Virtually all the teachers' colleges admit general academic students and more than half of the 34 mentioned confer the bachelor's degree.

## **Want Some Theodolites?**

Surplus self-recording theodolites, highly specialized instruments used to photograph and record anti-aircraft shellbursts, are being offered by the War Assets Administration to educational institutions at nominal prices for training and research in the field of engineering, according to a recent W.A.A. announcement.

## **Einstein Foundation to Start University**

The Albert Einstein Foundation for Higher Learning, Inc., formed last month, plans to establish in Waltham, Mass., a Jewish sponsored secular university open to students and faculty members of all races and religions. Dr. Israel Goldstein, president of the Jewish Conciliation Board of America, is president of the foundation.

The foundation has been created with the cooperation of Professor Einstein, who is quoted as follows: "I am convinced that such an institution will attract our best young people, and not less our young scientists and learned men in all fields. It would satisfy a real need. I would do anything in my power to help in the creation and guidance of such an institution. It would always be near to my heart."

Dr. Goldstein declares that the campus and some physical facilities already have been acquired. The foundation will be supported by contributions from Jewish organizations and individuals. Collection of funds will begin in October, although no formal campaign is contemplated.

Other officers of the foundation are: Dr. Alexander M. Dushkin, executive vice president of the Jewish Education Committee of New York, secretary, and Julius Silver, vice president of the Polaroid Corporation of America, treasurer.

## **Copper Stockpile Soon May Be Exhausted**

The entire government stockpile of copper may be utilized during the next ninety days to further the veterans' emergency housing program, the Civilian Production Administration said in August. Copper and brass products entering into housing and other structures include water pipe, flashings, gutters, downspouts, shower pans, water storage tanks, weather stripping and lighting fixtures.

## **Grants for Minority Group Studies**

The commission on community inter-relations of the American Jewish Congress has appropriated \$10,000 for grants-in-aid to university students to enable them to carry on scientific research on minority group problems in communities throughout the United States. The program has as its goal

the development and testing of new technics for dealing with problems of group tension and conflict.

## **N. U. Defers Building as Costs Soar**

A men's commons at Northwestern University and possibly faculty houses have been postponed indefinitely because of prohibitive building costs.

Harry L. Wells, vice president and business manager, declares that the estimate of the cost of the commons zoomed from between \$200,000 to \$300,000 a month ago to \$500,000 on bids just received from subcontractors. The commons was to have contained additional dining facilities for an enlarged enrollment of veterans and other students.

Commitments have been made by 65 members of the faculty and staff with the university to build houses on property adjoining the Northwestern University golf course in Wilmette. Priorities have been granted for six.

## **U. of C. Constructs Administration Building**

Work has been started on a new \$920,000 administration building for the University of Chicago, according to Wilbur C. Munnecke, vice president. Holabird and Root are the architects.

The new structure will house the offices of the chancellor, president and vice presidents, the secretary of the board of trustees, the controller, bursar, business manager, purchasing office, dean of students, registrar, admissions, student counseling and the university examiner.

The university's radio office and studio to broadcast the University of Chicago round table also will be located in the new building. Other services to be included are: alumni office and foundation, public relations, press relations and a university post office.

## **Telescope Given Harvard Goes to Colorado**

The large Bausch and Lomb telescope, for more than thirty years a landmark in Rochester, N. Y., recently became an outright gift to Harvard University.

Constructed in 1912 and used by thousands of visitors at the observatory located atop the optical com-

pany's building, the telescope will be installed at Climax, Colo. The Colorado observatory, astride the Rocky Mountain divide, is the highest in the world. More than 11,000 feet above sea level, it is operated jointly by Harvard and Colorado universities.

### Veterans Can Speed Own Subsistence Checks

Checks to veterans on college campuses should reach them within thirty days after receiving application forms. At least that is the goal of the Veterans Administration. V.A. has increased its personnel, arranged overtime work schedules, shortened application forms and developed close cooperation with school administration staffs in an effort to assure prompt payments.

The veteran himself, the colleges and the V.A. all must act on each application and the V.A. points out that if any one of the three fails to act promptly delays will ensue.

Four steps by which the individual veteran may speed payment of his subsistence checks have been outlined by W. F. Gilchrist, director of the rehabilitation and education service of V.A. They are as follows:

Veterans entering a school not in the area of the regional office that issued their certificates of eligibility must file changes of address, otherwise weeks or months may pass before the office learns of the changes.

Each veteran student must obtain a certificate of eligibility before any payments can be made.

Students are advised to watch school bulletin boards and follow instructions that may be posted.

Finally, Mr. Gilchrist says, veterans are asked to cooperate by filling out and mailing promptly the postcards they receive at the start of the term. These provide a check as to whether the men actually are at school and entitled to payments.

### Seek U. S. Teachers for German Centers

Ten American universities were recently selected to provide teachers for instructing dependents of armed services personnel in the occupied zone of Germany. They are Columbia, Boston, North Carolina, Indiana, Michigan, Minnesota, California, Washington, Texas and Ohio Uni-

versity. Each institution will supply 11 teachers.

Both men and women are needed for the positions which pay \$3725 annually. Teachers must have a bachelor's degree and at least two years of successful teaching experience.

Present population figures indicate that schools may be located in Frankfurt, Heidelberg, Berlin, Munich and Stuttgart. The schools will serve as demonstration centers of democratic educational methods for German teachers.

### Receives \$12,000 Swift Grant

A grant of \$12,000 to Northwestern University for fundamental research on the chemistry of amino acids has been made by Swift & Co. The four year research project will be under the direction of Prof. Charles D. Hurd. The grant to Northwestern is the only one of 38 Swift grants, totaling \$600,000, allocated in the field of organic chemistry.

### Air Forces Call in Educators as Advisers

A far-reaching program of career training, exceptionally broad in scope compared with previous standards of military education, has been inaugurated at the Air University of the army air forces at Maxwell Field, Alabama. The army air forces has obtained the services of many of the leading educators of the nation, both in an advisory capacity and as members of the staff and faculty.

Dr. Robert L. Stearns, president of the University of Colorado, is permanent chairman of the board of visitors whose mission is to advise the Air University on educational policy and to report to Gen. Carl Spaatz, commanding general of the army air forces, on the status and progress of the A.A.F. educational system.

Members of the board are: Dr. Clarence A. Dykstra, provost of the University of California at Los Angeles; Dr. James B. Conant, president of Harvard University; Dr. Karl T. Compton, president of M.I.T.; Dr. Elliott Dunlap Smith, provost of Carnegie Institute of Technology; Dr. George D. Stoddard, president of the University of Illinois; Dr. Isaiah Bowman, president of Johns Hopkins University; Dr. Francis T. Spaulding,

New York Commissioner of Education; Dr. Raymond R. Paty, president of the University of Alabama; Dr. Willard E. Givens, executive secretary of the N.E.A.; Dr. George F. Zook, president of the American Council on Education, and Dr. John W. Studebaker, Commissioner of Education.

### Educators to Survey U. S. Work in Germany

George F. Zook, president of the American Council on Education, heads a delegation of American educators to Germany to observe and evaluate the educational program of the American Military Government. The party left Washington August 22 and will be gone about a month.

William Benton, Assistant Secretary of State for Public Affairs, invited the group to carry out the mission at the request of the War Department.

Other members of the mission are: Bess Goodykoontz, U. S. Office of Education; Henry H. Hill, president, George Peabody College for Teachers; Paul M. Limbert, president, Y.M.C.A. College, Springfield, Mass.; Earl J. McGrath, dean of education, University of Iowa; Dr. Reinhold Niebuhr, Union Theological Seminary; the Rev. Felix Newton Pitt, secretary, Catholic school board, Louisville, Ky.; Lawrence Regin, director of education, Textile Workers Union of America, C.I.O.; T. V. Smith, University of Chicago; Prof. Helen C. White, University of Wisconsin, and Eugene N. Anderson, U. S. Department of State.

### Admissions Demand Misleading

A false impression of the demand for college admissions is created by the practice of prospective students applying for admission at as many as 10 or 15 institutions, according to Elwood C. Kastner, registrar at New York University, where veterans will make up 16,000 of the 37,000 students expected.

### Closer Check on Job Training

Veterans on-the-job training courses must meet new strict standards or else the veterans' checks will be stopped. This was the instruction given regional offices by the Veterans Administration on September 7. Regional offices are to keep a close check on concerns giving on-the-job training.



## South Gets Carnegie Money to "Vitalize Instruction"

A five year program in which 33 selected universities and colleges in the South will join to "vitalize instruction" was announced recently by Dr. O. C. Carmichael, president of the Carnegie Foundation for the Advancement of Teaching.

The project will be financed by a special grant to the foundation of \$700,000 from Carnegie Corporation of New York, plus \$200,000 from the cooperating institutions, making available a total of \$900,000.

"The program," Dr. Carmichael states, "is based upon the belief that probably the greatest single need in American higher education today is to vitalize instruction.

"Among the generally accepted barriers to creative intellectual activity in the average college faculty are heavy teaching loads which allow no time for independent study; low salaries which must be supplemented by summer teaching or other lucrative employment; inadequate library facilities, and the limited opportunities to get intellectual stimulus from colleagues in the same field. Lowering these barriers, as we hope to do through this program, will strengthen higher education at one of its weakest points."

The foundation will provide \$15,000 annually for five years to each of the university centers, and they have agreed to add individually \$5000 a year. Each of the 20 college units will receive \$4000 annually, which the college will supplement with \$1000 a year.

## K. U. Students Open Own Bookstore

After more than thirty years of discussion the University of Kansas students will operate their own bookstore.

The store will be run on a nonprofit basis with profits returned to the student purchasers every six months. L. E. Woolley, a former instructor in the school of business, will manage the enterprise. All employees will be students.

In addition to classroom and laboratory supplies, the store will take over the entire supply of used texts which the Women's Executive Committee's book exchange now has in stock and will attempt to handle most of the

textbook business for the students in the spring. The store also will acquire the surplus books from the army and navy programs which operated at the university.

## "Home Is the Sailor, Home From the Sea"

"Tugboat Annie" of movie fame would turn green with envy if today she could see the neat, compact, comfortably furnished tugboats in dry dock which are to be the homes this fall of 186 veterans attending Alabama Polytechnic Institute.

A.P.I. is the only college in America today utilizing this method of housing



students. The tugboats were obtained through F.P.H.A. negotiations with the U. S. Maritime Commission.

The cabins, each of which will comfortably house two single male students, are 7 feet wide, 17 feet long and 7 feet high. They contain built-in cabinets, table and two bunks complete with springs and mattresses. A special feature of the tugboat is a glass-enclosed pilot house atop one end of the cabin. This pilot house, accessible by a ladder, is used as a study room by cabin occupants.

## McReynolds' Will Aids Colleges

James Clark McReynolds, former Supreme Court justice, who died August 24, left several thousand dollars to colleges in his will, in addition to bequests to other nonprofit organizations. Justice McReynolds left \$10,000 each to Vanderbilt University, Centre College, the University of Virginia and the Kentucky Female Orphans School, and \$5000 to Lynchburg College in Virginia. In bequeathing the \$10,000 to Centre College, he asked that the funds be used to instruct girls in domestic affairs.

## Parks Air College Now Part of St. Louis U.

Acquisition by St. Louis University of Parks Air College, nationally known aviation engineering school near East St. Louis, Ill., was announced recently by the Very Rev. Patrick J. Holloran, S. J., president of the university.

The university acquired complete ownership by purchasing all outstanding shares in the air school after Oliver L. Parks, founder and president of the school, had transferred his holdings, amounting to more than 43 per cent, to the university as a personal gift.

Transfer of ownership gives the oldest university west of the Mississippi River the nation's oldest federally approved aviation school. To be known as the Parks College of Aeronautical Technology of St. Louis University, it becomes the twentieth school comprising the university.

Addition of Parks Air College gives St. Louis its first major university with a complete aviation engineering department.

## Illinois to Study Small Home Comforts

Complete indoor comfort for tomorrow's low cost home is the purpose of a research program to be conducted in a new research residence to be built at the University of Illinois.

To be completed some time this fall, the residence will serve as a practical laboratory where equipment designed to furnish year round indoor comfort will be tested under actual living conditions.

Incorporating such features of modern exterior and interior design as large solar windows, the new residence will be a one story structure. Testing equipment to be installed will bring the cost to more than \$25,000.

## Cancer Research at Wisconsin

Three grants for cancer research at the University of Wisconsin amounting to \$21,200 were accepted by the board of regents at a recent meeting. Grants from the National Cancer Institute and the American Cancer Society to be used for research in McArdle Memorial Laboratory were among several accepted by the regents.



## Georgia Students Help on Housing Units

As a result of an appeal made recently by William Tate, dean of students of the University of Georgia, 116 students have volunteered to work part time in order to speed the completion of new housing units on the campus. Students are employed by the construction company in charge of erecting the building and will be paid a minimum wage of 65 cents per hour.

A checkup of applications for the jobs revealed that many students have had experience in construction work. Qualifications vary from timekeeping to plumbing and electrical work.

## Nine College Towns Newly Under Rental Control

Nine college towns were among the 15 rental areas brought under rent control September 1. These towns crowded with veterans seeking to resume their education are:

Crawfordsville, Ind., seat of Wabash College; Ames, Iowa, Iowa State College; Columbia, Mo., University of Missouri; Stephens College and Christian College; Athens, Ohio, Ohio University; State College, Pa.; Cookeville, Tenn., Tennessee Polytechnic Institute; Nacogdoches, Tex., Austin Teachers College; Logan, Utah, Utah State Agricultural College, and Price, Utah, Carbon College.

## Wayne Voted Building Fund

Wayne University, Detroit, is to have substantial relief from overcrowded conditions through an appropriation of \$2,700,000 granted by the 1946 special session of Michigan state legislature for emergency building. The fund is to be used to construct a classroom building, at a cost of \$900,000 for structure and equipment, and a \$1,800,000 science laboratory building.

## Buys Relocation Center Housing

The University of Denver announces the purchase of 14 buildings, formerly part of the Amache Japanese-American relocation center. Plans have been made to use the 56,000 square feet of space for classrooms, laboratories, offices, gymnasium, health center and journalism building.

## Names in the News

R. Douglas Pinkerton, business manager of Marietta College since 1930, resigned his position, effective August 31. His successor has not been appointed. He has been active in college business circles and is now serving as president of the Ohio Association of College and University Business Officers.

Reed Alvord, assistant to the president, Colgate University, has been appointed secretary of the university, a post that has been vacant since the retirement of Alfred E. Alton in 1931.

Phillips Bradley has been appointed as director of the new Institute of Labor and Industrial Relations at the University of Illinois. Mr. Bradley comes from the post of director of extension of the New York State School of Industrial and Labor Relations at Cornell University. The institute will conduct research on labor problems and coordinate educational programs in which labor is especially interested. It will serve labor and industry as the college of agriculture at the university serves agricultural interests.

The Rev. John J. Cavanaugh, C.S.C., vice president, University of Notre Dame, was named to the presidency recently to succeed the Rev. J. Hugh O'Donnell, C.S.C., who will go abroad on a special academic mission for the Congregation of the Holy Cross.

Dr. Gilbert F. White, a former member of the staff of the University of Chicago, has been appointed president of Haverford College to succeed Felix Morley, resigned. Archibald MacIntosh will continue as vice president and dean of admissions. He served as acting president.



Edward R. Stettinius, former Secretary of State, receives congratulations from President John L. Newcomb of the University of Virginia upon the announcement of Mr. Stettinius' appointment as rector of the university, a position corresponding to that of chancellor in many universities.

Lyndon O. Brown, a New York advertising executive and marketing research man, has been named twelfth president of Knox College. He is a graduate of Carleton College and holds an M.A. and Ph.D. from Northwestern University.

Capt. Charles Claire Caveny, on terminal leave from the navy, has been appointed dean of the undergraduate division of the University of Illinois being established on Navy Pier in Chicago. This division will accommodate approximately 4000 students.

Dr. Jessie P. Bogue is the new executive secretary of the American Association of Junior Colleges. Dr. Bogue was formerly president of Green Mountain Junior College, Putney, Vt., and a member of the Vermont legislature. New or reorganized junior colleges to the number of 74 are expected to reopen this month. They are located in 23 states.

Jesse E. Buchanan, dean of the college of engineering at the University of Iowa, has been released from his contract in order to accept the presidency of the University of Idaho. He will succeed Harrison C. Dale.

Dr. Rush Jordan succeeded Dr. Sheldon E. Davis as president of Montana State Normal College, September 1. Dr. Davis becomes president emeritus of the college. Dr. Jordan was professor of social studies at that institution before his presidential appointment.

Dr. C. E. Brehm, dean of the college of agriculture, University of Tennessee, has been named acting president until a successor to Dr. James D. Hoskins is named.

John A. Dunlop, assistant professor and secretary for student programs at Rensselaer Polytechnic Institute, has been appointed dean of administration of the Associated Colleges of Upper New York State. These colleges will utilize war facilities at Geneva and Plattsburg.

Henry W. Herzog, comptroller of George Washington University, has been named vice president of the District of Columbia control of the Controllers Institute of America.

Dean Harvie Branscomb of the Duke University Divinity School was recently named chancellor of Vanderbilt University. Dr. Branscomb has served as dean of the divinity school since 1944 and has been a member of

the Duke faculty since 1925. A graduate of Birmingham-Southern College, he received both the B.A. and M.A. degrees from Oxford University where he was a Rhodes scholar. His Ph. D. degree is from Columbia University.

*Dr. Glenn W. Sutton* of the school of business administration, University of Georgia, has been appointed director of the university's Savannah branch. According to *Dr. Harmon W. Caldwell*, university president, the

Savannah branch will remain open for an indefinite period of time, probably until facilities are sufficient to allow all students to attend the university in Athens.

*Maj. J. D. Blair*, registrar at Mercer University for the last twenty years, has resigned to become registrar of the Savannah branch, University of Georgia. Maj. Blair assumes his duties at the newly organized branch at Hunter Field this month.

*O. K. Stookesberry*, formerly manager of the Keefner-Melvin Lumber and Concrete Company, has been appointed coordinator of the new home building management course, University of Denver. The new four year course "will train specialists in the home building industry and prepare them to meet the nation's No. 1 problem—housing."

*Ethel C. Jack* of Waucoma, Iowa, has joined the Eastern Washington College of Education staff as assistant director of dining halls. A graduate of Upper Iowa University, Miss Jack studied at Stout Institute and received her master's degree from Iowa State College. During the war she was manager of a war plant cafeteria in Washington, D. C., and the last year has been manager of the faculty club dining room at George Washington University.

*Dr. Lillian M. Johnson* of Elkton, Ky., whose work as a navy lieutenant won a commendation from V. Adm. E. L. Cochrane, chief of the navy's bureau of ships, has been named assistant dean of women at the University of Cincinnati and will be associated with *Mrs. Katherine D. Ingle*, dean.

*William E. Alderson Jr.*, an army air forces lieutenant from Oxford, Ohio, will be associated with *Dean Robert W. Bishop* as assistant dean of men and as assistant supervisor of the college union, University of Cincinnati.

*Gretchen Tonks* is the new headmistress of St. Mary's Hall, San Antonio, Tex. Her appointment became effective July 1.

*Dr. Eri Jay Shumaker*, associate professor of English, Denison University, has been appointed president of Oneida Institute in Kentucky. Dr. Shumaker assumed his new duties in July.

## DIRECTORY OF ASSOCIATIONS

### Associations of College and University Business Officers

#### Central Association

President: C. D. Simmons, University of Texas; vice president: Herbert Watkins, University of Michigan; secretary-treasurer: T. E. Blackwell, Washington University.

Executive Committee: A. W. Peterson, University of Wisconsin; Lawrence R. Lunden, University of Minnesota; H. H. Brooks, DePauw University; William B. Harrell, University of Chicago.

#### Eastern Association

President: W. R. Wagenseller, Drexel Institute of Technology; vice president: H. W. Herzog, George Washington University; secretary-treasurer: Boardman Bump, Mount Holyoke College.

Executive Committee: C. H. Wheeler III, Richmond University; George E. Van Dyke, Syracuse University; J. Harvey Cain, Board of Higher Education, New York; Charles E. Grubb, University of Delaware; R. K. Bachelder, Simmons College.

#### Southern Association

President: W. Wilson Noyes, University System of Georgia; first vice president: George R. Kavanaugh, Berea College; second vice president: W. T. Ingram, Alabama Polytechnic Institute; third vice president: Howard MacGregor, Agnes Scott College; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

Executive Committee: Jamie Anthony, Georgia School of Technology; E. H. Fisher, Southeastern College; J. B. Paysinger, Columbia College; James F. Blair, Union College; C. B. Markham, Duke University.

#### Western Association

President: J. Orville Lindstrom, University of Oregon; vice president: William Norton, University of California; secretary-treasurer: K. B. Sauls, Brigham Young University.

Executive Committee: O. D. Garrison, University of Idaho, Southern Branch; Nelson A. Wahlstrom, University of Washington; Robert D. Fisher, University of Southern California.

### Association of Business Officers in Negro Colleges

President: G. Leon Netterville Jr., Southern University; vice president: Isiah Creswell, Fisk University; secretary: V. D. Johnston, Howard University; treasurer: Mark Birchette, Dillard University.

Executive Committee: Don A. Davis, Hampton Institute; Viola Means, South Carolina State College; L. H. Foster Sr., Virginia State College; W. A. Morgan, Bishop College.

### Educational Buyers Association

President: James J. Ritterskamp Jr., Washington University; vice president: Gerald D. Henderson, Vanderbilt University; vice president: Charles Hoff, University of Omaha; vice president: H. B. Bentsen, George Williams College; treasurer: Edward K. Taylor, Cornell University Medical College; executive secretary: Bert C. Ahrens.

### Association of Superintendents of Buildings and Grounds of Universities and Colleges

President: L. F. Seaton, University of Nebraska; vice president: Paul H. Elleman, Ohio State University; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

Executive Committee: L. F. Seaton, University of Nebraska; Paul H. Elleman, Ohio State University; A. F. Gallistel, University of Wisconsin; Henry E. Pearson, Indiana University; John J. Colgate, University of Pennsylvania.

### Association of College Unions

President: D. R. Matthews, University of Florida; vice president: Douglas O. Woodruff, University of Utah; secretary-treasurer: Edgar Whiting, Cornell University; editor: Porter Butts, University of Wisconsin.

### American College Public Relations Association

President: Harold K. Schellenger, Ohio State University; vice presidents: research, E. Ross Bartley, Indiana University; membership, W. Henry Johnston, Colgate University; regions, Horace Renegar, Tulane University; radio, Elmer G. Sulzer, University of Kentucky; athletics, William H. Wranek, University of Virginia; secretary-treasurer: Max E. Hannum, Carnegie Institute of Technology.

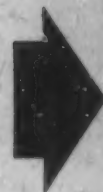
Publications: editor, Lorena Drummond, Southern Illinois Normal University; associate editor, Paul Faris, Hendrix College; business manager, Roy K. Wilson, National Education Association.

### National Association of College Stores

President: Norman M. Gay, Boston University Book Stores; vice president: A. W. Littlefield, Barnes and Noble, Inc., New York City; immediate past president: E. C. Rather, University Cooperative Society, Austin, Tex. Directors: Fred Davis, The Citadel Canteen, Charleston, S. C.; John H. Jenkins, St. Louis University Book Stores, St. Louis; H. H. Hays, Berea College Store, Berea, Ky.; George Racine, Student Book Exchange, Evanston, Ill.; manufacturer's representative: Charles Lofgren, Sanford Ink Co., Chicago; executive secretary: Russell Reynolds, 189 W. Madison St., Chicago.



# PRODUCT INFORMATION



Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41 through 64. Pages 58-63 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

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September 1946

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NAME	TITLE
INSTITUTION	
ADDRESS	CITY
STATE	ZONE



**FOR  
THRIFTY CARE OF  
WAXED FLOORS**



**DRY CLEAN  
AND POLISH IN  
ONE OPERATION**

*With the Steel-Wool Pad  
that's Welded!*

Steel-wooling provides a simple means of keeping waxed floors at their cleanest, lustrous best in between periodic refinishinges. This method, in a single operation, dry cleans and polishes the floors to new brightness, and to a safer, wear-resisting finish.

Steel-wooling is indeed an economy, but one that can be extended still further by using a pad that's welded! Welded construction allows the pad to wear evenly, hence slowly, and prevents shredding and bunching of the pad. This type of construction gets all the wear out of all the material! In fact, actual tests prove that the Finnell Welded Pad wears three to four times longer than pads of ordinary design. And because it assures uniform contact, the Welded Pad must and does do a finer job faster.

Finnell Pads are self-adjusting, and can be used on any fibre brush, with any disc-type machine. Seven sizes, four grades. For consultation or literature on Finnell Pads, Waxes, and Maintenance Machines, phone or write nearest Finnell branch or Finnell System, Inc., 4409 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

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WAXES**

Finnell-Keto Solid Wax  
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Finnell Paste Wax  
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Several Types

**FINNELL SYSTEM, INC.**

*Pioneers and Specialists in*

**FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES**

**BRANCHES  
IN ALL  
PRINCIPAL  
CITIES**

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ELENT

THE FAIRCHILD

# Language Master

ES EXC

XCELENT

ES EXC

ES EXCELENTE

ES EXCELENT

NTE ES EXCEL

NTE ES EXC

ES EXCELENTE

ES EXCELENTE

NTE ES EXCELENTE

XCELENTE ES EXC



*Any word, any phrase repeated again and again patiently!*

**YOU'RE TEACHING Spanish.** Let's suppose you've distinguished between the distinct and the rapid pronunciation of vowels. You'd like to repeat native spoken examples of each vowel until your students have mastered them fully.

But how? By blindly searching for twelve examples on a language record? No. By simply using the new Fairchild Language Master. It's a word or phrase-spotting playback machine. It has an illuminated 'spotting dial' that records the location of any word or phrase on a record. It has a hand operated lever which returns the pickup to the word or phrase to be repeated. It permits any word or

phrase to be repeated again and again — until mastered.

Operation is simple. The on-off switch, volume control, spotting dial and lever are conveniently grouped on the turntable panel. The amplifier-speaker unit is mounted in the removable, cable-connected cover so that it can be turned around to face the class. If desired, the Language Master may be supplied without the amplifier-speaker unit for use with headphones for quiet listening; or for connection to any independent amplifier or radio.

Where record-making equipment is available, instructors may make and chart

records especially adapted to class needs. In addition, the Language Master can be used to teach many phases of musical theory, appreciation and history from recordings. And radio program directors can use it for spotting in background effects. Or it can be used for synchronizing recorded commentary with silent film or slides.

The Fairchild Language Master can be operated from any 110-120 AC light socket. It is priced within range of both classroom and student ownership. For complete information address: 88-06 Van Wyck Boulevard, Jamaica 1, New York.



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CAMERA  
AND INSTRUMENT CORPORATION

SOUND  
EQUIPMENT





# A LIFT TO YOUR PHYSICAL EDUCATION PROGRAM WITH

THE *Acromat* *Exp.* TRAMPOLIN

- GIVES LIFT TO GYMNASTICS
- CREATES A NEW SPORT-ACROMAT-ICS

• T.M. REG.



## GYMNASTS' FAVORITE ADAPTED BY MEDART FOR MODERN PHYSICAL FITNESS TRAINING

Give your Physical Education program a real "lift" with the *fun-appeal* of the Medart Acromat-Trampoline. Youngsters of all ages take to it like the proverbial "duck" takes to water! The Acromat-Trampoline is designed to be used as an integral part of your Physical Education program as well as a separate recreational activity. Manual of instruction and charts are provided with each outfit. Performance on the trampoline has long been recognized by leading gymnasts as one of the most practical means of developing body control and muscular coordination. Medart believes that in the Acromat-Trampoline it has developed a needful, practical piece of gymnasium equipment... an investment that will pay great dividends in developing physical fitness... and in renewed enthusiasm for physical education. Production planned for early fall delivery. Write now for brochure which completely describes the Acromat-Trampoline.



The Acromat-Trampoline when open ready for use measures 7 ft. 7 in. wide by 13 ft. 10 in. long. Bed 3 ft. from floor. Patented frame permits quick and easy folding to a compact unit 21 in. wide, 7 ft. 7 in. long and 5 ft. high.

MODEL NO. 1 **\$240<sup>00</sup>**

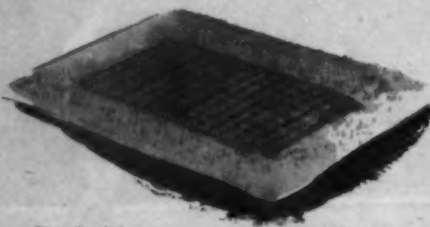
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FRAME PADS EXTRA

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MANUFACTURING CO.  
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Heavy quality Velveteen bath mats in choice of Green, Blue, Dusty Rose or Gold. Size 24" x 36".  
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**\$2.70**  
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18" x 36"  
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24 Doz. Lots  
Doz. **\$3.85**

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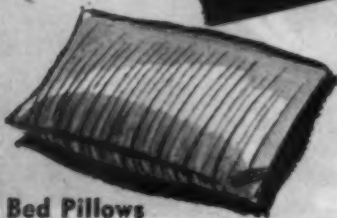


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Large selection of colorful draperies for the institution. In stock.

Write us for Prices and Samples

**Write Us About Any of Your Furnishing Problems**



## Bed Pillows

Star-San process feather pillows. 21" x 27"  
Priced from **\$7.60** to **\$8.90** each  
30-Day Delivery



## Woven Bedspreads

No. 1-4238  
Size 98 x 90"  
Colors, blue and white

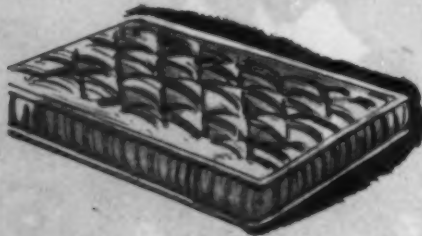
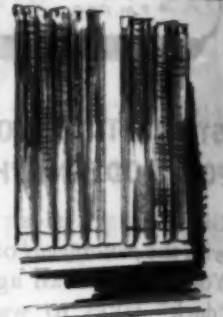
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**\$2.35**  
Delivery Prompt

## Marquisette Curtains

Cream colored in 36" x 87" size. Hemmed top, bottom and sides.

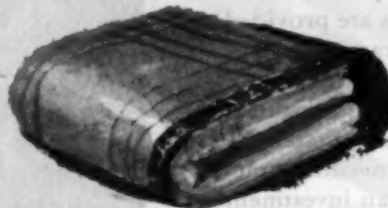
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**\$2.98**

Box, lots only.  
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## Inner Spring Mattresses

We specialize in institutional constructed mattresses. Deliveries are not prompt—write us.



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1-5104D—62" x 84". Weight 3 1/2 lbs. Dark gray. 22% wool, 63% reprocessed wool, 15% rayon.

Each **\$4.85** Delivery Prompt

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Assorted colors—water-proof fabrics. Size 6 x 6.

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**\$2.99**  
Each

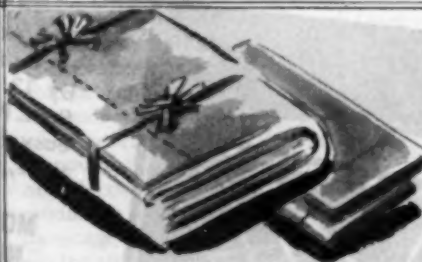


Delivery Prompt



## Carpeting

This merchandise is not too plentiful—write us your specifications—we may be able to help.



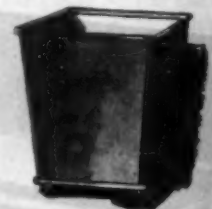
## Bed Sheets and Pillow Cases

At present we are swamped with back orders. Write us from time to time about these items.

## Metal Waste Basket

Heavy gauge steel in baked enamel finishes. Rolled edges and rubber feet. Green, Brown, Red or White.

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11" top, 13" Ht.  
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**Sofa**

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Beautiful Sofa covered in J-Grade Leatherette covers. Choice of colors. Built for institutional use. 30-Day Delivery

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**Rubber Squee-Gee Mat**  
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Lots of 12

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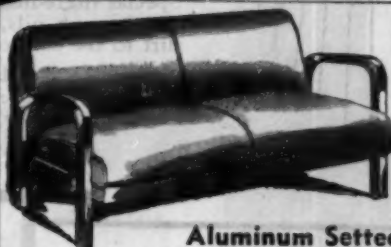


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Companion piece to sofa above. Selected J-Grade Leatherette covers. Choice of colors.

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**Aluminum Settee**

Covered in Masland Duran covering, the new modern fabric; resists practically everything.

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**Aluminum Chair**

2F-187

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Polished Aluminum arms and hardwood frame. Masland Duran covered. Built for hard wear.

**Duraluminum Costumer**  
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Sturdy chair with steam bent stretcher. One piece back legs.

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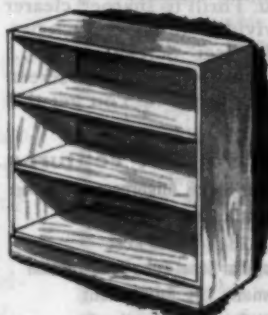
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**Steel Bunk Beds**

None in stock at present—but we expect a supply in the near future.

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**Unfinished Bookcase**

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Janitors appreciate the convenience of  
One Single Cleanser for ALL their floors



ONE way to keep your janitor happy is to make his job easier. Give him one cleanser for all floors, eliminate special cleansers and the time wasted in mixing and preparation, and you'll find him "whistling" while he works.

Floor-San gets the cleaning job done *quicker and safer*. For you can use Floor-San with perfect safety on rubber tile, asphalt tile, linoleum, terrazzo, wood, or any other flooring.

Floor-San is absolutely harmless to any flooring not harmed by water. It has received the approval of the Rubber Flooring Manufacturers Association. It is endorsed by manufacturers of asphalt tile.

Furthermore, Floor-San gives *thorough* cleansing action. Special ingredients *quickly* remove water soluble matter, cut through oils, greases and inert solids and float the dirt to the surface where it is easily washed away.

Begin to use Floor-San for all your school floors. Your janitor will appreciate its convenience and you'll get *better* cleaning at *lower* cost.

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*New*  
1947

**RADIANT Screens**  
make all pictures  
look better . . . !

Project your motion pictures and slides on a screen which makes them fairly "POP OUT" into the room with you. Thrill to sharper, clearer black-and-white pictures...richer, more vivid color shots. Such performance is the result of the Radiant "Hy-Flect" Screen surface... thousands of tiny glass beads set in the snow-white plastic screen surface—glass beads that reflect light, never absorb it. You get this in New 1947 Radiant Screens...

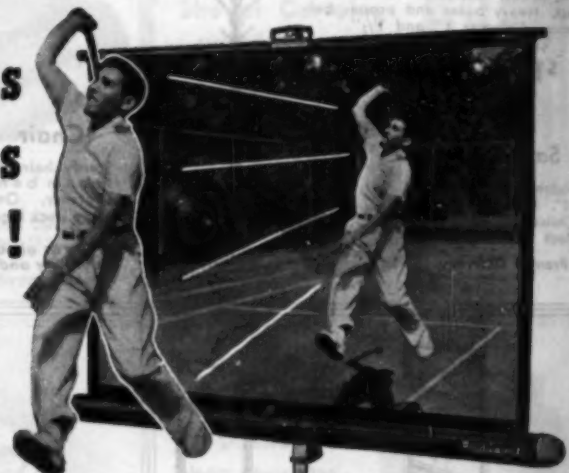
**Plus all these Wonderful Exclusive New Features**

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|---|---|
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| 2. Screen Leveler (Pat. Pending)                | 7. Automatic Leg-Lock                       |
| 3. Shakeproof Safety Catch                      | 8. Rubber-Ball Tripod Feet                  |
| 4. Feather Touch Adjusting Handle (U.S. Patent) | 9. Triangular Steel Tube Construction       |
| 5. Double-Action Auto-Lock (Pat. Pending)       | 10. Automatic Leg Adjustment                |
|   | 11. Finger Grip Carrying Handle             |
|   | 12. Streamlined Design and Duo-color Scheme |

All pictures look better...when projected on the new, brilliant, instantly adjustable 1947 Radiant Screens.

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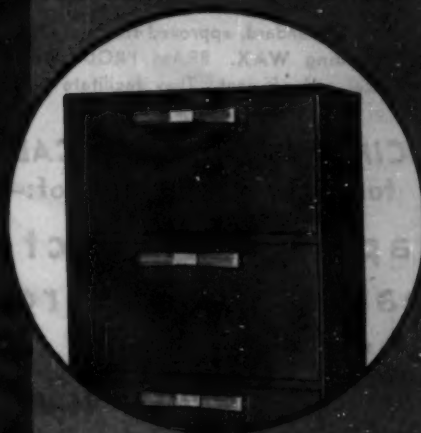
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**SECRETS  
OF GOOD  
PROJECTION**



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A New and Better Way to File!



Note wide, ample handles  
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Rock-a-File gives you *modern filing*. Its revolutionary side-filing development, featuring compartments that "rock" open sideways, brings you *the first basic filing advancement in 53 years!*

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**Economical**—Supplies last. Folders slide in and out sideways. No more mutilated tabs, indexes, guides.



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and all other standard, approved floor treatment products including WAX. BRAM PRODUCTS are safe, economical and efficient. They facilitate easy maintenance of perfect flooring.

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RD 2



P 570

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LOCK CORPORATION

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by the way it's made*



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**STEEL  
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CHAIRS**

are ruggedly constructed to give lasting service. Designed for maximum comfort and utility, Clarin chairs fold easily, quickly and compactly — are your best investment in the long run.

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THE VOICE OF THE CAMPUS

The  
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65 Years'  
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### Tablet-Arm Chairs are ideal for today's busy classrooms

**I**N the American Envoy Tablet-Arm Chair No. 378 are combined all the seating features most important for your students—and you.

Students benefit from the improved comfort and posture provided by the deep-curved back rails, self-adjusting lower rail with noiseless pivoting device, redesigned seat form, and the conveniently placed tablet-arm.

You benefit from the exceptional durability and economy of this

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You can find everything you need in schoolroom furniture in "American's" complete line. Our expert Seating Engineers are ready to help you solve your seating problems. Write today for information.



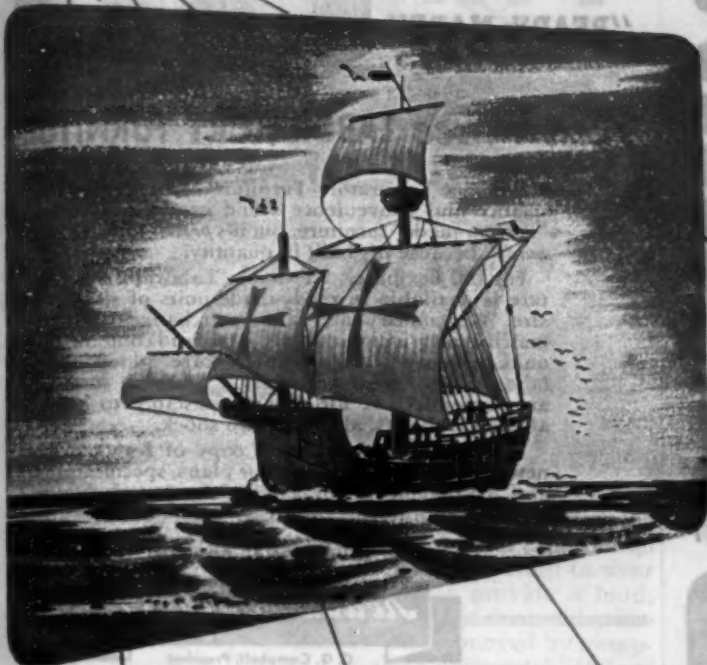
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American Envoy  
Chairs No. 368

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cabinet models for printed  
any length, up to 42" wide

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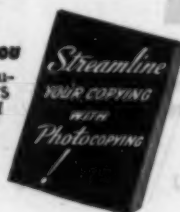
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BUILT like  
"CUSTOM-MADE"  
PRICED like  
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## Kewaunee LABORATORY FURNITURE

Kewaunee Laboratory Furniture incorporates the quality and convenience you'd expect only from "custom-made" furniture. But it's priced like "ready-made" because it's built in quantity.

For full flexibility, Kewaunee Laboratory Furniture is available in ready-made units of standard size. Kewaunee units are interchangeable and match exactly... you simply select and combine the units you need. As new pieces are added, your laboratories "grow gracefully." Working surfaces are of KemROCK for defiant resistance to acids, alkalies, solvents, abrasion and shock.

Write today for your free copy of Kewaunee's new 94-page book. Gives floor plans, specifications and arrangements for High School and Junior College laboratories. Address:

EDUCATIONAL DIVISION

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**Carillons**



*The Memorial with a Voice*

Unmatched for purity, dignity and clarity, MAAS GENUINE CATHEDRAL CHIMES will sound from your church or chapel tower in full, clear tones to attract all who hear them. For beauty of performance, tonal superiority, wider coverage; for smooth, responsive action, look to MAAS, the leading genuine cathedral chime system in the amplified carillon field. Write for demonstration by dealer nearest you.

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**Carillons**



# INSIDE FACTS ABOUT A "DIRTY" STORY

...OR HOW TO MAKE  
FLOORS STAY CLEAN  
UP TO 30% LONGER

Day-by-day service in hundreds of office buildings, hotels, hospitals and schools have repeatedly demonstrated the fact that with non-slippery Car-Na-Lac and Continental "18", floors stay clean up to 30% longer. Built to wear longer, these quality floor treatments provide a hard, non-tacky finish that resists grinding in of dust and grime ... the dirt stays on the surface until removed by sweeping. Furthermore, Car-Na-Lac and Continental "18" are uniquely processed to adhere to the floor ... become "welded" to the floor and prevent tracking off.

You'll find, with either Car-Na-Lac or Continental "18", that as most maintenance men know the best floor treatment ... the one that wears the longest ... is usually cheapest in the long run. Fewer applications are required resulting in a double saving: (1) overall material costs are reduced, (2) less manpower is needed to apply treatment.

If you want to know how to make floors stay clean longer, make the "split-corridor" test, below. A trial will give you convincing proof that Car-Na-Lac and Continental "18" floor treatments keep floors clean up to 30% longer ... wear longer, too.

## CONTINENTAL CAR-NA-VAR CORP.

1645 E. National Ave.

Brazil, Ind.

Specialists In Heavy Duty Floor Treatments

**CAR-NA-LAC**  
LACQUER-LIKE FLOOR FINISH

Acts like a lacquer made of wax. Applied with the usual wax applicator. Levels out as it dries, resulting in a uniform, streakless, lacquer-like gloss. Self-polishing ... dries in 15 to 20 minutes. Car-Na-Lac floor treatment has at least twice the wearing qualities of ordinary water waxes and is waterproof, non-slippery. Adapted for all floors except unsealed "raw" wood. Meets Proposed Federal Specifications for Item 9, Type 1.

**CONTINENTAL "18"**  
THE SUPER FLOOR FINISH

The same as Car-Na-Lac except that it contains about 38% more solids. Heavier solid content gives a higher gloss and reduces number of applications. Covering capacity averages the same as Car-Na-Lac, but one coat does the work of two. Recommended by a leading national casualty insurance company for safety. Meets U. S. Treasury Specifications for "Finish Material" (and Proposed Federal Specifications for Item 9, Type 11).

## MAKE THIS

### "SPLIT-CORRIDOR" TEST

Order a 55-gallon drum of Car-Na-Lac or Continental "18" floor finish—whichever you prefer—from your local Car-Na-Var floor maintenance representative ... or from the factory direct. On arrival, apply floor treatment to one-half of any corridor or floor you choose. For comparison, apply brand formerly used to balance of area. See for yourself that the part treated with Car-Na-Lac or Continental "18" floor finishes stays clean up to 30% longer. If you are not completely satisfied, return unused portion for full credit.

*maximum  
security*



*with*

### NATIONAL LOCK COMBINATION SHACKLE LOCKS

- 1 Designed and ruggedly built for long life and maximum protection to school lockers.
- 2 Heavy plated case — double weight, steel construction for protection against abuse.
- 3 Smooth operating, precision made lock mechanism, assures dependable service.
- 4 Heavy 5/16" diameter shackle. Black enameled dial with white numerals and graduations.

### AVAILABLE IN TWO POPULAR STYLES

No. 68-265 (at right). A heavy duty lock, requiring three number dialing to open. When shackle is inserted into case, combination is disarranged and lock must be redialed to open. Dial is locked against rotation when shackle is open.

No. 68-264 (at left). Same top quality construction as above, except with master key feature. Student uses dial to open lock. Authorized custodian can gain immediate access to lock with master key.

### Free LOCK RECORD BOOK

An attractive, durable, loose-leaf leatherette covered LOCK RECORD BOOK, containing charts for records of your Combination Locks, is available at no extra cost with each order of 100 locks or more.



**NATIONAL LOCK COMPANY**  
Lock Division • ROCKFORD, ILLINOIS



# CONTROL FLOOR WEAR

*Scientifically*

## With PYRA-SEAL

Floors wear out for two reasons... (1) from abrasion on top caused by the grinding of foot traffic... and (2) from deterioration underneath the surface—rotting caused by moisture seepage. Some floor seals protect against either one of these floor destroying agents... but PYRA-SEAL protects against BOTH. It's DOUBLE protection for your floors.

PYRA-SEAL is a product of laboratory science, developed by Vestal to conquer floor wear from ANY source. It dries to a hard, lustrous, beautiful and long-wearing finish for surface protection. It seals the pores in the floors for protection underneath.

PYRA-SEAL is back from war. We stopped production of PYRA-SEAL when vital ingredients went to war — we would not compromise with quality by substituting. Now, these vital ingredients are back — AND SO IS PYRA-SEAL!



**VESTAL INC.**  
ST. LOUIS NEW YORK





# DON'T LET A BURNOUT SPOIL YOUR SHOW



Be sure it's G-E...to be sure of:

1. Greater screen brightness, clearer pictures... G-E Lamps are designed to give you full advantage from the optical system of your equipment.
2. More uniform screen brightness... differentially coiled filaments on most popular sizes fill the film aperture smoothly.
3. Uniformly dependable performance on every replacement... thanks to precision manufacture, rigid inspection.
4. Constant improvement, as developed by G-E Lamp research, for better, clearer projection. See your G-E dealer today.

## GET A "SPARE" G-E projection lamp

Plenty of high-wattage types  
now available

Suppose you were showing a movie... holding your audience with the interest and action of the film... and then came BLACKNESS!

Don't let a burnout spoil your show! See that you have a spare G-E Projection Lamp with every movie projector you operate. Your dealer now has plenty of these popular sizes!

200-watt T-10	750-watt T-12
300-watt T-10	1000-watt T-12
500-watt T-10	

See him today and get the spares you need so you'll be ready for emergencies. For some slide projectors however, and projectors requiring lower wattage lamps, the supply is still limited.

Confused about lamp sizes? If you have a variety of types of projector, send for the G-E Projection Lamp Guide, which tells you the correct size lamp for all types of projectors. Simply write General Electric, Div. 166, FW-9, Nela Park, Cleveland 12, Ohio.

For better "flash" pictures  
keep asking for

**G-E midgets!**



**G-E LAMPS**  
GENERAL  ELECTRIC

# Back to Clean, Sanitary, Immaculate SCHOOLS, COLLEGES, UNIVERSITIES

Hillyards are proud of the fact that their floor Treatments, Maintenance Products and Sanitation Supplies have contributed to the high standard of healthful cleanliness in all types of public and private buildings throughout America for almost Half a Century. Hillyard

Hi-Quality Products give lasting satisfaction and satisfactory economy.



There is a Hillyard Floor Treatment Engineer in your locality, wire or write us today. His suggestions and recommendations are gladly given without cost to you.

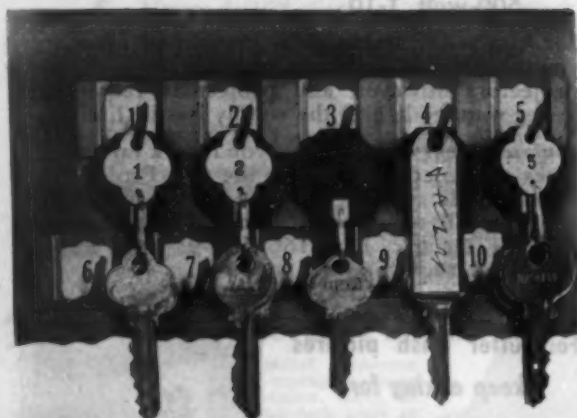
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★ BRANCHES IN PRINCIPAL CITIES ★

FLOOR FINISHES TREATMENTS...MAINTENANCE and SANITATION SUPPLIES...DISINFECTANTS

## TELKEE



### VISIBLE KEY CONTROL

A complete indexing system for the care of keys:

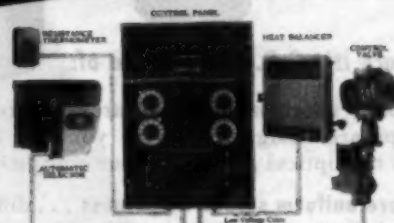
- 1 TELKEE is a tried and proven Visible Key-Filing—Key FINDING System.
- 2 Whether there are a few keys or thousands of keys — TELKEE is simple and effective.
- 3 It is the perfect system for knowing your keys — knowing where they are when you want to use them.
- 4 TELKEE retains a Reserve-Pattern key — never loaned. Tells you to whom other keys have been loaned.
- 5 Your keys are identified only by the special TELKEE Cross Index — Positive Control.
- 6 New Instruction booklet based on 14 years' experience makes TELKEE easy to set up and operate.

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P. O. MOORE, Inc.

302 Fourth Ave.  
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### AN APPLE FOR THE STUDENT



#### A DUNHAM HEATING SYSTEM:

The Dunham room resistance thermometer, heat balancer, selector and control valve provide completely automatic, highly accurate temperature control as an integral part of system operation.

### CLASS ROOM COMFORT INCREASES FACULTY AND STUDENT APTITUDE AND EFFICIENCY

The Dunham system increases the comfort within the building — eliminates over and under heating — provides a better working environment. It operates by completely automatic "System"

control, thus eliminating "guess-work" — maintains temperatures at a desired level throughout the building. C. A. DUNHAM COMPANY, 450 East Ohio St., Chicago 11, Illinois.

9-46

## DUNHAM HEATING MEANS BETTER HEATING



*At Your Service...*

# HERMAN NELSON product application engineering

**P**RODUCT APPLICATION ENGINEERING — Herman Nelson's scientific and practical application of the exact type, size and model of equipment to best solve any heating or ventilating problem — is available to you for any construction program.

You will find Herman Nelson Product Application Engineers thoroughly familiar with school heating and ventilating problems. They are ready with practical as well as technical assistance in the selection and application of heating and ventilating equipment which will provide most efficient and economical results.

Now for a word about Herman Nelson products. During the past 40 years, Architects, Engineers and School Authorities have learned through actual experience that you can't buy better heating and ventilating equipment than that bearing the Herman Nelson nameplate. This is true whether a building or modernization program calls for the use of unit heaters, unit ventilators, propeller or Centrifugal fans or any combination of these products.

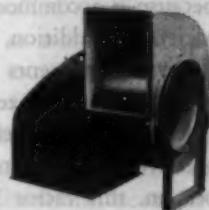
Herman Nelson Products plus Herman Nelson Product Application Engineering make possible the maximum in both efficiency and operating economy.



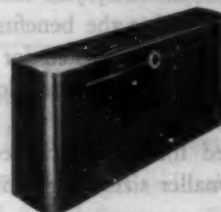
Herman Nelson  
Unit Heaters



Herman Nelson  
Propeller Fans



Herman Nelson  
Centrifugal Fans



Herman Nelson  
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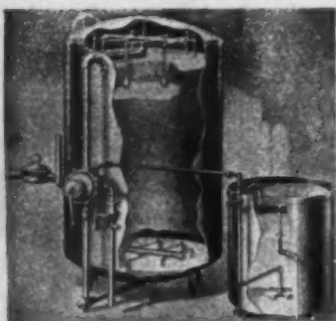
My Title

# WHAT'S NEW.....

*The easiest way to get more information about the new products described in this section is to use the postage paid card opposite page 49. Just circle the key number on the card which corresponds with the number in the headline of each item. COLLEGE and UNIVERSITY BUSINESS will send your request to the manufacturer.*

## Water Softener

Has 44 Per Cent Greater Capacity



Any superintendent of buildings and grounds knows the havoc that follows the flow of hard water through boilers, water systems and various other units of the plant as well as the inefficient operation which gradually ensues. He will find the Elgin Corporation's Bulletin 607,

"Zeolite Water Softeners and Other Water Conditioning Equipment," a helpful refresher course; those not so well informed on the hazards of mineral impurities in water will find the booklet enlightening.

In comparison with other zeolite water softeners, the Elgin is said to deliver as much as 44 per cent more soft water, because it accommodates a 44 per cent greater zeolite capacity. In addition, an ingenious distributing and collecting system prevents loss of zeolite, eliminating the need for costly, periodic zeolite replacements. The zeolite is kept clean, active and efficient so that more "zero-soft" water is delivered per pound of regenerating salt used. As time goes on, this factor is said to become increasingly apparent for the Elgin continues to operate with a high degree of efficiency year after year.

In presenting the benefits and economies of soft water, seven features are listed for the Elgin Water Softener: 44 per cent more soft water, lower investment, lower operating cost, higher efficiency, less maintenance, longer life and need for less space because of the Elgin's comparatively smaller size.—*Elgin Softener Corporation, Elgin, Ill.*

## Data on Fluorescent Fixtures

CUB 114

Presented in "Wrap-Around" Catalog Packet

Specifications and installation data on 11 standardized commercial fluorescent fixtures suitable for lighting school, college and university units are presented in a new "wrap-around" catalog packet just issued by Sylvania Electric Products. Installation in single or continuous rows as well as the easy maintenance features of not having to remove nuts or screws to relamp the fixtures and the simplicity with which the hinged louvers and glass diffusing panels can be swung open and lifted clear for cleaning are explained.—*Sylvania Electric Products Inc., Salem, Mass.*

## CUB 113

## Heat-Treating Furnace

CUB 115

Available for Classroom, Laboratory, Workshop

A versatile heat-treating furnace in the low cost field is now available for classroom, small laboratory or workshop, utilizing temperatures up to and including 1850° F.

Known as Pereco Model 220-W, this new furnace is applicable in plastics, heat-treating of metals up to its peak range, porcelain enameling, jewelry enameling and laboratory control work in addition to its ceramic application. It is built for either laboratory or production work, including hardening, annealing, drawing, carburizing or melting metals, preheating high speed steels, melting or annealing glass and ceramic firing, even the baking of enamels to metallic surfaces.

It is quality insulated and has a wall-thick hinged door and resistance wire wound embedded elements for heating to its high temperature. The 220-W operates on 115 volts and draws 1500 watts.—*Pereco Equipment Company, 842 North Pearl Street, Columbus, Ohio.*

## Door Closer Catalog

CUB 116

Emphasizes Importance of Concealed Control

Whenever appearance of the building is a vital factor, concealment of such operating devices as door closers is important, it is emphasized in the new LCN Door Closer catalog. Twenty-five of the booklet's 36 pages are devoted to promotion of LCN's concealed door closer lines, but four pages are given



also to the traditional exposed type of equipment. Ten double-page "spreads" present full-page pictures of well designed doors having concealed control. In addition, "blueprint" and phantom drawings augment the printed descriptions to show how the result is accomplished.

In another section, the mechanics of door control and door closer construction is explained in words and diagrams. A combination index and "door closer selector" page is provided to help the user choose the proper closer for the type of door involved. A copy of the catalog is available upon request.—*LCN, 466 West Superior Street, Chicago 10, Ill.*



## Dehydrated Onions

Eliminate Painful Preparation, Reduce Storage Space

Dehydrated onions, a new product known as "Magic Onion," eliminate tearful hours of peeling and chopping in addition to providing uniform quality, control of taste and control of cost. Moreover, storage problems are reduced to a minimum and there can be no spoilage or shrinkage.

Grown only in California and Arizona, these dehydrated onions may be used for any purpose for which fresh onions are used: salads, stews, soups and flavoring of various dishes. Each No. 10 can equals 17 pounds of fresh raw onions; one case equals 100 pounds of raw onions, and storage requirements are reduced 90 per cent.—*H. J. Heinz Company, P.O. Box 57, Pittsburgh 30, Pa.*

## Insecticide Dispenser

Completely Automatic in Operation

A completely automatic insecticide dispenser requiring no manual attention during operation is the new Hydro-Mist. Filling the dispenser with West Vaposector Fluid, setting the time clock and plugging the cord into an A.C. or D.C. outlet are the only steps necessary preliminary to operation. A folder describing the Hydro-Mist Vaporizer is available on request.—*The West Disinfecting Company, 42-16 West Street, Long Island City 1, N. Y.*



## Paint Thinner

May Be Used in Many Architectural Finishes

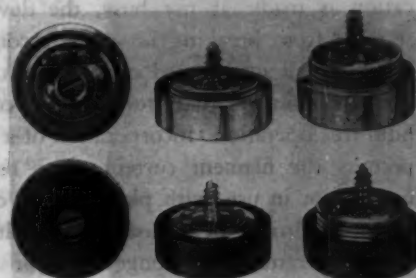
Reducit, an all-purpose paint thinner, may be used for reducing almost any type of paint product, except lacquers or shellac, and is said to be an ideal substitute for turpentine. It may be used in any architectural finish where turpentine would ordinarily be used and works equally well in synthetic types of paints and enamels.

Reducit is recommended for use in flat paints, house paints, primers, undercoaters, varnishes, bulletin paints and all types of enamels, including synthetics. It cleans brushes quickly and easily and has no disagreeable odor. The product is available in pints, quarts, gallons, 5 gallons and drums.—*O'Brien Varnish Company, 101 North Johnson Street, South Bend 21, Ind.*

## Self-Locking Casters

Solve Problem of Wobbly Furniture

The distracting situation which occurs when furniture wobbles because the pieces are sitting on uneven floors or half on and half off rugs can be remedied easily by the



use of Levelor Casters. They are molded of durable plastic in clear and mahogany finish, can be attached to all types of furniture legs and have a unique and patented feature which permits finger-tip adjustment with automatic locking. Fractional height adjustments are made possible by means of a screw thread arrangement, and readjustment to new height positions is accomplished by unlocking with a slight downward pull.—*Levelor Sales Corporation, 46 Clinton Street, Newark 2, N. J., and 231 South La Salle Street, Chicago 6, Ill.*

## Low Cost Flooring

Designed for General Utility Areas

Armstrong's Accoflor provides a low cost, durable, yet attractive floor which is said to be ideal for general utility areas. This covering can be installed over concrete, wood, magnesite, metal, tile, terrazzo or marble subfloors, on or above grade. Its resilient yet tough mastic composition, bonded to an asphalt saturated felt backing, is long wearing, quiet and restful underfoot and is easy to maintain. Because of its thermoplastic qualities, surface damages to Accoflor, such as cuts and indentations, normally smooth out under regular floor use. It is installed in roll form.—*Armstrong Cork Company, Floor Division, Lancaster, Pa.*

## Public Address, Intercommunication

Systems Meet College, University Requirements

Two new products of interest to colleges and universities have been announced by Bell Sound Systems. The company's Model 2078 Bell Phono-P.A. System is said to meet practically every need for high quality public address and music coverage. This portable unit is complete with a dual speed turntable for both 16 inch transcriptions and commercial recordings and has a powerful high-fidelity amplifier, a desk type of crystal microphone and auxiliary equipment. The rugged Keratol-covered case measures only 13 by 19 by 20 inches. The unit is offered as the most efficient, moderately priced system serving such a wide range of applications.

More recently introduced to the market is the Belfone "Maestro" intercommunication system, designed by Joseph Federico of Detroit, well known industrial engineer. The heart or brain of the new unit is Testalok, an exclusive

Bell designed device which performs two main necessary functions. When a station key is depressed, Testalok tests the line called to see if it is busy. If busy, immediate indication is made; if not busy, the device locks out other stations from breaking in, thereby completely eliminating overheard or interrupted conversations. Elimination of input transformers has resulted in completely noiseless, hum-free operation. Incorporation of a stand-by unit which permits the filament current alone to operate when the unit is not in use, with plate current drawn to tubes only when the unit is being used, has resulted in lower operating temperatures and longer life for tubes and all other compartments of the unit. System maintenance is thus reduced to a minimum.

The cabinet is made of Durez bakelite molded in two sections and assembled with molded end flanges in a slot closely resembling lapped construction used in wood assemblies.—*Bell Sound Systems, Inc., 1183 Essex Avenue, Columbus 3, Ohio.*

## Window Insulating Unit

CUB 123

Hermetically Sealed; Prevents Condensation



A new type of window insulating unit known as Twindow has been announced by the Pittsburgh Plate Glass Company. As the name implies, Twindows are integral insulating units of two or more plates of glass enclosing a  $\frac{1}{4}$  inch or  $\frac{1}{2}$  inch hermetically sealed air space. A revolutionary feature is the use of hollow aluminum tubing to separate and hold the glass plates in

position. The entire unit is framed with a light-gauge stainless steel channel (.015 to .020) with the channel legs extending  $\frac{3}{8}$  inch inward on the surface of the glass from the base around its periphery to give maximum protection during installation and use.

The Twindow unit virtually prevents condensation, one of the most difficult transparent fenestration problems to solve in all types of applications, and is said to constitute one of the most efficient thermal and dust insulation units yet developed. Use of large windows is thus permitted and heating and airconditioning costs are appreciably reduced.

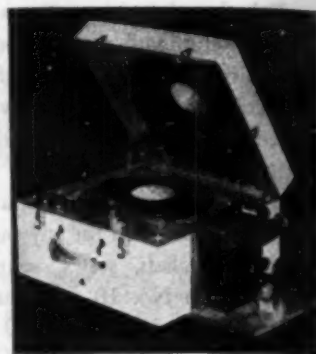
Clear, polished plate glass is used in construction of the standard Twindow unit. Units can be fabricated, however, with special glasses to meet practically all needs. Specially developed production processes make it possible to provide the Twindow units in a wide range of sizes in any combination of straight edges, including standard double-glazing as well as special triple, quadruple and multiple glazed panels. It is possible also to produce certain simple cylindrical bends within definite limitations.—*Department PRT, Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh 22, Pa.*

## Automatic Feature

CUB 124

Offers New Technics in Slidefilm Presentation

The automatic feature embodied in the Aids Equipment Corporation's new sound slidefilm projector is said to open up whole new technics in slidefilm presentation. With the record arm in place and a filmstrip in the projector, no other action is necessary: The equipment operates by itself, changing frames as the narration flows from the high quality amplifier. The instructor can devote all of his time to the class; semi-animation is possible; there are no more bells and beeps, no more manual operation of the projector; remote control permits individuals to narrate their own filmstrips if they wish.



The institution's present slidefilms can be made automatic in only a few days. Filmstrips using the old non-automatic records can be re-recorded and the filmstrip brought up to date. In most instances, the cost of converting the old filmstrips to the new automatic technic will be less than the original cost of recording, it is reported, or, in the case of silent filmstrips, only a slight additional charge will be required.—*Aids Equipment Corporation, 131 West Fifty-Second Street, New York 19, N. Y.*

## Fire Protection

CUB 125

Products Described in Catalog Sections

Two catalog sections describing products for protection against fires have been prepared by B. F. Goodrich Company and are available upon request. The fire hose is the subject of the first section, which lists the company's brands of fire hose, including tables on sizes and weights. The second section is devoted to the recently introduced carbon dioxide fire extinguisher which weighs only 15 pounds but has proved effective in extinguishing fires before they get a good start.—*The B. F. Goodrich Company, Akron, Ohio.*

## Granulated Bouillon

CUB 126

Adds Zest, Nutritive Value to Dishes

Recipes using Fleischmann's Stox Granulated Bouillon have been compiled in a booklet prepared by Standard Brands. Although the bouillon contains no meat, it has a savory, meat-like flavor which adds zest to dishes. It can be used to take the place of meat stock in soups, gravies, sauces; added to meat and to meatless dishes to give richness and flavor appeal, and even to add interest to sandwiches and salads as well as to increase their nutritive value. The product is made with hydrolyzed proteins, yeast-vegetable extract, salt, vegetable fat and spices and is said



to be an excellent source of B complex vitamins, especially Vitamin B<sub>1</sub>.

Recipes are included for cocktails, entrees, salads, salad dressings, sandwich spreads, sandwiches, sauces, soups and interesting miscellaneous dishes. In addition, directions for the product's general use are presented, and one section is devoted to food equivalents in weights and measures by commodities.—*Standard Brands, Inc., 595 Madison Avenue, New York 22, N. Y.*

## Individual Hot Meals

CUB 127

### Easily Transported in New Container

Mealpack container, Model 11, an ingenious device for transporting individual hot or chilled meals, will be a welcome addition to college meal service, for it permits delivery of meals where and when wanted and from either an inside kitchen or outside commissary facilities.

Of stainless metal, the container is insulated and has a double-seal principle which ensures a sanitary tamperproof meal from kitchen to consumer. Its patented construction permits packaging individual freshly cooked hot meals, including hot biscuits, toast, breads, pastries, cutlery and napery for distribution and serving up to three hours after packing. Lengthy heat holds, when required, are obtained by use of thermostatically controlled holding cabinets. For most delivery and serving timetables, no external heat is needed. Spillage and intermingling of juices and flavors during delivery or holding periods are eliminated by the dish and closure lid design.

The new container is the basic element of a complete Mealpack System for organizing mass meal service on a controlled quality basis and at lower, more easily controlled costs. The system embodies a full line of kitchen packing, mobile handling and serving equipment to be announced this fall.—*Mealpack Corporation of America, 152 West Forty-Second Street, New York 18, N. Y.*

## Data on Lighting

CUB 128

### Presented in Colorful Folder

"America's No. 1 Lighting Job," a new folder just released by the Edwin F. Guth Company, contains valuable data on lighting for academies, colleges and universities, for it describes and illustrates in full color the re-



lighting of the United States Military Academy at West Point with Guth Cadets. The information contained in the folder is based on the lighting research and eyesight studies which preceded the installation. Copies are free upon request.—*Edwin F. Guth Company, 2615 Washington Boulevard, St. Louis 3, Mo.*

## Soap Dispenser

CUB 129

### Offers Ease of Maintenance, Dependable Operation

There are no grooves and gadgets to collect dirt on the new Turco Handisan Dispenser, an all metal, heavy duty hand soap dispenser. White vitreous porcelain and chrome have been used to achieve a simple modern design, presenting a smooth, unseamed surface and stainless metal top which can be cleaned with one wiping movement.

The dispenser will hold a generous quantity of Turco Handisan, an effective hand cleaner with antiseptic action; the entire top of the unit is hinged and raises easily for refilling; a concealed locking device prevents tampering. Inside, the dispenser is black, vitreous-fired porcelain which facilitates the movement of the cleaning compound as it is released. The dispenser is built with a sloping inner surface so that the compound is directed toward the actuator, thus preventing plugging of the mechanism. Slight upward pressure on the actuator releases just enough Handisan for one hand washing.

Literature about both the dispenser and the hand cleaner is available.—*Turco Products, Inc., 6135 South Central Avenue, Los Angeles 1, Calif.*



## New Bactericide

CUB 130

### Is Odorless and Nonvolatile

Hyamine 1622, a new bactericide said to be 200 times more effective on germs than phenol (carbolic acid), may widen the whole sanitizing field because of its two outstanding properties: It is odorless and nonvolatile. Hyamine 1622, a quaternary ammonium compound, is a crystalline powder readily soluble in water. It is stable, nonirritating, nonflammable, possesses low toxicity to warm-blooded animals and does not injure fabrics, metals or paint surfaces.

Solutions containing Hyamine 1622 left standing in either open or closed containers lose none of their original effectiveness but actually gain in disinfectant strength.

The wetting and emulsifying properties of Hyamine 1622 are of great advantage in the preparation of germicidal cleaning solutions, ensuring thorough wetting and penetration into cracks and crevices, normally difficult to disinfect. When used as a sanitizing rinse, the solution remaining on the disinfected surface becomes more and more concentrated as water evaporates and, since the active ingredient is nonvolatile, disinfection continues until the surface is dry.

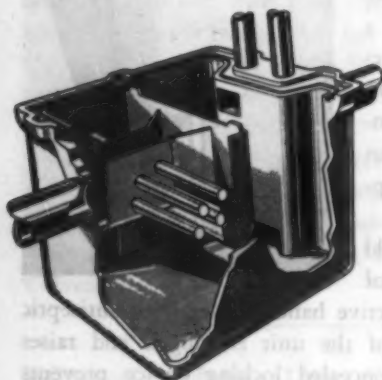
Hyamine solutions are particularly efficacious in laundry operations for disinfecting clothes, towels and linens. It

can also be effectively employed in college infirmaries, university hospitals, college dairies and in kitchen and housekeeping operations.—*The Robm and Haas Company, 222 West Washington Square, Philadelphia 6, Pa.*

## Grease Interceptor

Permits Commercial Salvage From Waste

CUB 131



Institutions whose waste lines contain grease, fats or oils will be interested in the timely HydraFilter, a double acting grease interceptor embodying a number of design features which make it unlike any commercial grease trap heretofore placed on the market.

A new principle, hydraulic filtering of grease by grease, in addition to conventional gravity differential separation, is employed in the new filter, and the cycle of grease removal is as follows: (1) from the inlet, the grease laden waste mixture enters a flow diverting channel and then passes through the hydraulic filtering element where the bulk of the grease is removed; (2) the liquid then passes into the main body of the trap where conventional gravity differential separation takes place with more than 90 per cent of the grease being retained within the trap; (3) the accumulated grease resulting from the two operating actions rises to the storage compartment above and out of the way of the main current, clear, free from solids and commercially salvageable. The construction of HydraFilter also allows the selective handling of all solids.

Moderate first cost with increasing savings from reduced maintenance and salvaged fats is reported. Additional information about design, operation, sizes, prices or distributors can be obtained from the manufacturer.—*Wade Manufacturing Company, Elgin, Ill.*

## New Fabric

CUB 132

Has Qualities of Linen

With the successful completion of test samples of a new fabric, American industry now has the answer to the long continued absence of imported linen. A scientific blend of rayon staple and flax woven from blended yarns, the new fabric is said to embody all of the desirable qualities of 100 per cent linen plus some additional qualifications of its own.

This fabric is an ingenious blend of natural and synthetic fibers and has the luster, "hand," tensile strength and washability of fine linen in addition to having a clear smooth

texture that takes color well and is particularly well adapted for printing. Many who have used it say that it has superior "drape."

In the words of Frank L. Andrews, president of the Hotel New Yorker, the new fabric "is in no way a substitute for but rather an improvement on the original." It is available in limited quantities only.—*H. W. Baker Linen Company, 317 Church Street, New York 13, N. Y.*

## Thermostatic Trap

CUB 133

Developed for Small Equipment

In response to a demand from manufacturers of instrument sterilizers, water stills, plate warmers, coffee urns and other small steam heated equipment on which standard traps look out of proportion and are oversized, the Sarco Company, manufacturer of steam specialties, has developed a new thermostatic trap of small dimensions. The trap measures only 2 3/8 inches high over all, 1 inch center to face of inlet and weighs only 13 ounces; the connections are 1/4 inch or 3/8 inch I.P.S. Known as Sarco No. 10, it is equipped with Sarco helically corrugated bronze bellows, brass body and renewable valve head and seat of stainless steel and has a maximum operating pressure of 100 p.s.i. The trap can be used also as a compact, high pressure thermostatic air vent.—*Sarco Company, Inc., 475 Fifth Avenue, New York 17, N. Y.*

## Projectionist's Handbook

CUB 134

Aid to Student Operator

The 1946 Audio-Visual "Projectionist's Handbook," a pictorial manual for the guidance of the student operator, is now available. An authoritative, fully graphic manual on good showmanship for the educational or training film user, the illustrated booklet is complete with two color threading diagrams, pictorial charts and other visualizations and includes detailed steps for putting on a good audio-visual program. Film departments in schools, colleges and universities can order copies at quantity discounts.—*Publishers of Business Screen, 157 East Erie Street, Chicago 11, Ill.*

## Fluorescent Lamps

CUB 135

Now Available in Near-Daylight Color

The complete line of General Electric fluorescent lamps is now available in the new 4500-white color, characteristics of which are a balance between the present white and the daylight colors, according to lighting engineers at Nela Park, Ohio. The color is said to be sufficiently near daylight to meet ordinary needs for color discrimination and yet warm enough in tone to be pleasing for indoor illumination uses.

Because of the popularity of the color, announced last year by G.E. in 40 watt and 100 watt sized fluorescent lamps, all General Electric fluorescent lamps are now available in the 4500-white color, from 6 watt to 100 watt



sizes. The new color is available also in all four sizes of Slimline fluorescent lamps.—*Lamp Department, General Electric Company, Nela Park, Cleveland, Ohio.*

## Fungus Protection

CUB 136

### Offered for All Filmosound Projectors

The special process developed by Bell and Howell during the war to render military and naval sound projectors resistant to fungus and moisture is now available to individual owners of Filmosound projectors. The "tropicalization" process, which includes the coating of projector and amplifier components and wiring with a special fungus-inhibiting material, is recommended for use in localities where the climate is excessively humid. It is applicable both to new Filmosounds and to those already in use. Processing can be arranged for through the factory or through any branch office of the company.—*Bell and Howell Company, 7100 McCormick Road, Chicago 45, Ill.*

## For Tracing Images

CUB 137

### Optical Instrument for Artists and Students

The Artiscope, a new educational optical instrument for use in art departments, enables anyone to draw anything he can see. It attaches to a table or drawing board and transposes the object or scene viewed to the drawing paper.

An erect image, in full color, is shown and may be traced and colored by the person using the Artiscope. Besides being useful for professional artists, this new instrument will be of assistance in reproductions for college publications and bulletins.

The Artiscope is made of aluminum and is equipped with special mirrors. A suede finished clamp prevents table marring. The instrument can be continuously adjusted over one half range to alter the size of the image as it appears on the drawing paper. The price is \$4.95.—*Beeler Enterprises, North Hollywood, Calif.*

## Economies of Stoker

CUB 138

### Listed in New Bulletin

The increasing cost of coal adds interest to the Whiting Stoker Sales Company's Bulletin 608 which is available upon request. The bulletin lists 11 advantages for the Whiting Horizontal-Compression Feed (H-C) stoker: it burns any bituminous coal, even the poorest, saves tonnage on every BHP of output, increases capacity of present equipment, saves labor in a profitable way by allowing the engineer time to apply his talents to other maintenance problems, requires less manual labor, operates smokelessly without attention, uses less electricity for operation, utilizes the full grate area of the boiler, reduces fly ash to a minimum, removes ashes automatically without extra devices, embodies flexibility to meet all demands.—*Whiting Stoker Sales Company, 11 South La Salle Street, Chicago 3, Ill.*

## Laundry, Dry Cleaning

CUB 139

### Equipment Described in Memorandum

An eight page memorandum of facts about laundry equipment, prepared by the Prosperity Company, will prove helpful to colleges and universities planning to establish or enlarge laundry and dry cleaning services or to replace inadequate or worn out equipment.

Prosperity Washers now in use are reported to be cutting washing time about 50 per cent and to be reducing supply costs about 30 per cent. Prosperity Extractors are said to be efficient to a high degree as are the flatwork ironers.

With the company's wearing apparel units, only a minimum of hand finishing is required. Linen supply finishing units are included in the descriptions also.

In regard to dry cleaning and finishing equipment, only minimum space is required to set up a complete department by using the Prosperity equipment shown in the folder.—*The Prosperity Company, Inc., Syracuse 1, N. Y.*

## Automatic Machine

CUB 140

### Purifies Oils and Fats, Improves Food Taste



Flavolator, an automatic machine that will remove rancidity, excess acids, sludges, burned pieces or any form of contamination from oils and fats used in the cooking or processing of food products, is now being manufactured in a new popular size which is suitable for

use in cafeteria or dining hall kitchens. It keeps oil clean, prevents excessive smoking and acrolein fumes, removes odors and ensures better tasting foods.

The maker claims the Flavolator will quickly pay for itself through oils and fats saved and points out that most users find it unnecessary ever to discard cooking oil; they add oil only to replace that lost by normal absorption. In addition, it eliminates residues that gum up equipment and increase maintenance costs.

Model M-o, shown in the accompanying picture, is 15 inches wide, 16 inches long and 15½ inches high. It has a white enamel cabinet with chrome plated lid and comes equipped with two 4 foot lengths of flexible metal braid hose. Powered with a ¼ h.p. motor, its capacity is from 20 to 30 gallons an hour. It is said to be simple to operate with only two switches to throw and one valve setting to make. Signal lights indicate correct temperatures. Complete refills of the cartridge type are the purifying elements.—*Honan-Crane Corporation, 725 Wabash Avenue, Lebanon, Ind.*

*Announcing the*

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**SLIDE PROJECTOR**

with the features you  
have always wanted



AMPRO SLIDE  
PROJECTOR  
Model "30-A"  
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This new AMPROSLIDE projector (2" x 2") embodies the engineering skill and fine precision workmanship that have made Ampro 8mm. and 16mm. projectors world famous for quality. It offers features that guarantee quick, simplified operation -- and long satisfactory service, including:

**Automatic snap-action**, self-centering slide changer, with patented features that assure hair-line focus, perfect alignment of slides on screen, interchange of glass and ready mount slides without refocusing. Operates with one hand -- fingers never touch slide surface . . . **Convenient case lifts off** in a flash for easy accessibility . . . **F 3:5 anastigmat** projection lense. 5" focal length with convenient knob for hair-line focusing . . . **New condenser design** that combines maximum brilliance with cooler operation . . . 300 watts of uniform light with effective heat dissipation and minimum light loss . . . **Pointer aperture** permits use of pointer with slides . . . Attractively finished, compact, sturdy with clean flowing lines and controls and parts readily accessible . . . the ideal projector for brilliant full color or black-and-white 2" x 2" slide projection.

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COLLEGE and UNIVERSITY BUSINESS



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EVERY

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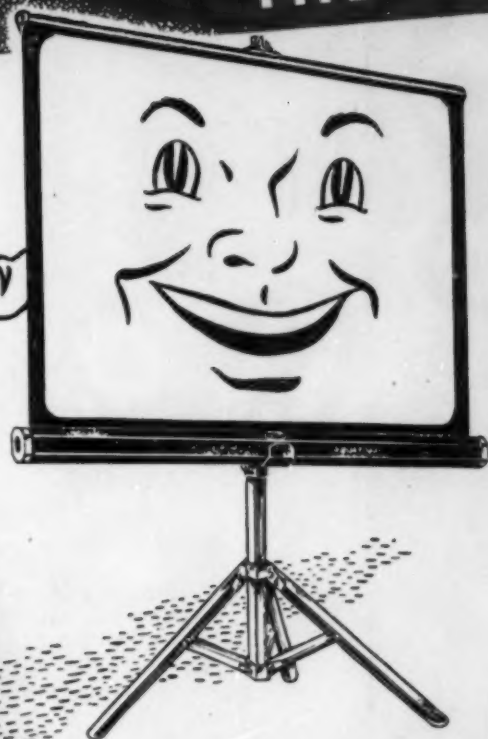


CHALLENGER

This modern, "physically perfect" projection screen possesses every quality of a champion athlete—and it's the champion in its own field, as a short demonstration by your dealer will readily prove. Its new, smart-looking *Octagon Case*, designed to protect the screen fabric, adds years of dependable service to the screen. An *exclusive process* of applying glass beads evenly over the entire screen fabric assures more brilliant and uniform light reflection and sharper pictures. See the new Challenger today at your dealer's or write for further information to Dept. 9 CUB.



Look FOR THE  
DA-LITE TRADE  
MARK AND THE  
OCTAGON CASE!



SCREEN	<i>The New Da-Lite Challenger</i>
BODY	<i>Sound-Sturdy (Octagon Case)</i>
LEGS	<i>Strong-New Ridge Top Design</i>
AGILITY	<i>Perfect-Easiest Screen to Set Up</i>
ADAPT-ABILITY	<i>100% New "Slide-A-Matic" Height Adjustment</i>

Other new improvements that are increasing the popularity of the Challenger are "*Slide-A-Matic*" locking, which eliminates all external locking devices and assures unmatched convenience in adjustment of height, stronger **Ridge-Top Legs** with smoothly-rounded scratch-preventive feet, **Safety-Grip Gooseneck** to prevent the hanger loop from slipping off, **New Hanger Loop**, and folding **Metal Handle**. See the new Challenger—buy the screen that passes every "physical"!

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